THE

WESTERN JOURNAL

OF THE

MEDICAL AND PHYSICAL SCIENCES.

JULY, AUGUST, AND SEPTEMBER, 1831.

Essays and Cases.

ART. I.—*Essays on Medical Education, and the Medical Profession in the United States.*—By the SENIOR EDITOR.

ESSAY IV.

STUDIES, DUTIES, AND INTERESTS OF YOUNG PHYSICIANS.

A DIPLOMA constitutes the great object of ambition with every student of medicine. This being acquired, he feels disposed to relax in his efforts; and enjoy his new dignity. In the opinion of his teachers, and, of course, of himself, he is qualified for the practical duties of the profession; and a happy feeling of self-complacency, sometimes of self-sufficiency, springs up. He is no longer a pupil, but a physician—walks on a higher level—is surrounded by new associates—and either turns his thoughts towards new objects, or to none at all.

The length of this period, varies with the temper and necessities of each individual. If voluntarily prolonged, the omen is decidedly bad. It indicates a want of ambition, of industry, of conscientiousness, or of the *amor scientiæ*. I am grieved to say, that too many of our young physicians, are deficient in one or more of these important elements of future eminence; and through life, prefer to vegetate in the lower walks of the pro-

fession, when they might ascend and flourish in its higher regions.

The young man of merit, regards a diploma, as only one of the series of honors, which lie within his grasp. He stops to breathe, but still remembers that he has passed through his novitiate only, and must speedily resume the labors by which alone he can hope to reach the highest honors of the profession. Many desire, even resolve, to be distinguished, but neglect to employ the proper means. Aware of the necessity of study, they intend to recommence it; but put off the day of renewed labor, till it is too late. Habits of idleness are formed; the allurements of society establish their fascination; examples of partial or temporary success in the acquisition of *business*, without an attention to studies, unfortuately surround and encourage them; the ignorance and credulity of the world, disclose to them the possibility of acquiring, without deserving its confidence; hard study begins to appear less indispensable, and more repulsive; their noble resolves are forgotten—their destiny becomes fixed, and a humble one it is. Such are the course and termination, of a majority of those who are put to the study of medicine, in the United States.

The physician who neglects his studies for the few first years after graduation, will seldom resume them. In many respects, this is one of the most important periods of his whole life. The omissions of youth may be supplied—those of manhood are fatal to our prospects, in proportion to their number and magnitude.

The young physician is not aware how soon his elementary knowledge—much of which is historical and descriptive, rather than philosophical—will fade from his mind, when he ceases to study. That which he possesses can only be retained by new additions. He cannot remain stationary; the moment he ceases to acquire, he loses; and this is true, not merely of professional, but of classical and general knowledge, as I have warned him in a previous essay.

Hence, every young physician, should devote a stated portion of time to the branches of learning which engaged (or should

have engaged) his attention, before he began the study of medicine. By doing this, he would, if previously well taught, soon make himself an able and accurate scholar; or, having been denied the advantage of early opportunities, he might supply many deficiencies, and save himself from the odium of gross illiterateness. It is *this* ignorance, still more than defective professional attainment, that constitutes the difference between the physicians of America and Europe. It perpetuates itself, because the *majority* of us, being in the same condition, are disposed, mutually, to sustain each other against the contempt of sound scholarship.

It is equally necessary for the young physician to review his professional studies, especially his anatomy. Should *it* once glide from him, the substratum of his surgery, physiology, and pathology, is gone. To prevent this, he should study it in connexion with these important branches, and unite the whole into one system; by which only, can it be retained, or they illustrated. But he must not merely review, he must *extend* his professional studies. Previous to graduation, the most industrious student can study but a small part of the books, which are current in the profession. He has had before him but a few specimens in each department: a large portion remains to be studied. In this duty he should proceed with method; and I will mention two principles which should govern him:—First, he ought successively to undertake the study of particular diseases, or groups of diseases, and seek, in all the books consecutively, for what relates to them. In this manner, he will form his own monographs. Secondly, when actual cases of disease present themselves, he should read whatever may be within his reach in reference to them. Such readings are more profitable than any others, because the motives which prompt him, sustain his attention and invigorate his understanding.

The same is the appropriate period, for the study of retrospective medical literature. But few of the works of past ages should be put into the hands of an under graduate; but no physician should regard his education as in any degree complete, until he has read the writings of most of the great observers,

and original geniuses, who have adorned the profession in different ages. He will thus trace up established principles, through all their modifications, to their sources, perhaps in a remote antiquity. He will, at every step, amass important but neglected facts. He will be taught how to think. Finally, his mind will be enlarged and liberalized, by an acquaintance with the revolutions which the science has undergone.

The auxiliary sciences should claim the attention of the young physician. The most important of these, are, comparative anatomy, zoology, botany, mineralogy, and meteorology; all of which, he will soon discover, have many interesting relations with the profession. With the utmost assiduity, he cannot, in the course of a three years' medical pupilage, acquire even the rudiments of these collateral sciences; and if he postpone the study of them till he has acquired professional business, he will have but little time to devote to their elements, although many opportunities must offer in the midst of business for reducing such knowledge to practice.

I would be superfluous, to say more on the subjects of study, in the first years of professional life. To regard that period as one of admissible leisure, argues either a pitiable ignorance of the extended limits of the medical profession, or a culpable disregard for its weighty and dignified responsibilities.

This is especially true, of country practitioners; who will find their time on distant visits, profitably occupied, in observing and collecting the natural productions of the district of country in which they reside; and, over which, most of them continue to travel for years, in utter ignorance of the interesting objects which it presents. By a very moderate attention to botany and mineralogy, the country physician, without the smallest neglect of his professional duties, would, in a short time, become well acquainted with the plants and minerals of his vicinity; and might thus make important contributions to the natural history of his country, while the *tædium* of his solitary rides would be effectually obviated.

The young physician should write as well as read. He should study with his common-place book by his side, especially when

engaged in works which he does not expect to peruse a second time—and make to them such references, or, from them such extracts, or, of them such abridgments, as may seem advantageous. It is a most useful exercise, to abridge and rewrite such parts of the greater authors, as relate to some interesting subject, and place them in *juxta position*, for the purpose of comparison or contrast. He should sometimes epitomize entire works, for the mere value of the exercise in professional composition; and to the same end translate, largely, from all the languages he may cultivate. He ought carefully to record his own observations and experiments; not in a diffuse and inaccurate style, but with precision and perspicuity. He should from time to time write essays and dissertations on speculative topics, and at subsequent periods subject them to a rigid criticism. By these various exercises, he will, at length, acquire a habit of expressing himself with facility and clearness, if he should never attain to elegance; while these repeated attempts at arranging and connecting facts, will have strengthened his reasoning powers, and given him habits of method. It is lamentable to see how few of us write well, that is, with simplicity, conciseness, and purity. The fault lies quite as much in neglect of practice in composition, as in the want of previous education. Neither will do alone; but of the two, the former is, perhaps, the more important.

Young physicians should write much, but publish little. Every good composition is not worthy of being read. It is easy to make new digests of common facts, in the form of essays and dissertations; or to report new cases, which differ in no essential point from those with which the books are already crowded. Such contributions swell, without enriching the archives of the profession. Every new arrangement of facts, should establish or subvert some principle, or rule of practice; and every reported case, should present, at least, one point of novelty. In reference to style, the *desideratum* of the former, is method—of the latter, brevity; and without these requisites, neither will be read with pleasure, whatever may be the value of its materials.

Inexperienced physicians should avail themselves of every opportunity, to reduce their theoretical knowledge to practice. They must never wait for select cases, nor shrink from a professional duty, however repulsive. Every young physician must expect to begin his career among the poor. Society attaches great importance to experience; and those who can command the services of one who has had practice, will not confide in a novice, whatever may be his genius or attainments.

The epoch of professional life now under consideration, is the time to perfect those habits of observation, which begin in our pupilage. Every clinical case ought to be a study, and nothing connected with it should be overlooked. I never knew a skilful practitioner who was not an acute observer. Whatever may be a physician's judgment, he should not be confided in, if obtuse in his powers of observation. To arrive at correct results, the first and greatest requisite, is, to have correct *data*, which can only be acquired by accurate and patient observation.

It is a prevailing opinion, that a physician should marry young. The beneficial influence of this step on the business of a young physician, is, I think, overrated. I have seen many acquire a respectable practice before marriage; and others fail in that particular, although they married early. A compliance with the maxim has, moreover, often led to a premature settlement of this kind, and done irreparable injury to the individual, by augmenting his expenses beyond his slender income; thus multiplying his cares and anxieties, so as greatly to abridge his hours of professional study. On the whole, however, it is necessary and proper for a physician to marry, as early as prudence will justify; for, to a certain extent, it *does* promote the acquisition of business; while it prevents the formation of habits of *solitary* study, which he cannot afterwards change. I look upon such habits, in a country where the domestic relations are so generally cherished as in the United States, as exceedingly detrimental to the cultivation of the profession. The physician who cannot study in the bosom of his family, and amidst the interruptions produced by domestic duties and professional labors, must neglect either one or the other. Early

marriage, before the establishment of fixed habits of secluded study, will, in general, save a professional man from this unfortunate dilemma. If he begin, in due time, to read and write, at the family fire-side, he will daily devote many hours, to both, that would otherwise be entirely lost; and thus be made, not only a better physician, but a better husband and father.

The same period of life, is that in which a physician is to form his manners, or rather his *manner*. In no vocation is manner more influential. Many young physicians have acquired popularity, by the mere force of manner, while others, of equal or greater professional skill, from the same cause, have never become favorites with the public. For such cases I can offer no infallible *recipe*. Dignity, tenderness, and modesty, would seem to be appropriate elements in the deportment of a young physician, whatever may be their effect on the people. They may not inspire confidence in the vulgar, in comparison with impudence and garrulity; but, sooner or later, their influence will be felt and acknowledged. It must, however, be admitted, that public favor is not always the meed of unexceptionable manners, even when sustained by competent skill.

In these instances, however, there is, generally, in the midst of prevailing excellences, some particular defect. For example, the individual may be deficient in *tact;* or wanting in attention and earnestness—a defect, which, more than most others, will retard the acquisition of business. Nothing captivates the friends of a sick person so much, as an earnest and anxious manner on the part of the physician. None are insensible to such a manner, while many will receive it as a substitute both for skill and social refinement.

But of all the extraneous aids to the acquisition of business, some *peculiarity* of manner is, perhaps, the most efficient. Should it even border on the absurd or the ridiculous, it is still in the opinion of the people, an indication of genius, and seldom fails to secure their confidence. To be effective, however, it must be natural, not assumed, as affectation is with difficulty concealed, and its discovery of course, brings contempt.

One of the first questions which perplexes a young man after his graduation, is the choice of a residence. He should, if possible, place himself within the pale of good, that is, of intelligent, society. In any other situation, both his mind and manners will degenerate. His companionship should be with the enlightened and refined of both sexes; for his character is to be formed, and should be modelled after good examples. It is not important that he should remain permanently in his first locality. He should not leave it, however, till he has passed through a period of probation, and acquired a competent amount of practical knowledge. He may then remove to a more extended theatre of action, where he ought to spend his life. If he have commenced within the precincts of such a situation, he should hold on till he acquires public confidence, however slow it may seem to be in coming. Not unfrequently this is a protracted period, and abounds in anxieties, hopes and fears, impatience, and hypochondriacism. Under these feelings, the young physician too often resolves on a change of residence; and, at the moment, when he is on the eve of acquiring business, transfers himself to another town, where, being a stranger, he is doomed to a second probation. Such removals, several times repeated, have proved fatal to the prospects of many, who, remaining patiently in one situation, would have found it productive of all they could desire.

Nearly connected in its nature and consequences, with this subject, is an attention to some other business, than that which is professional. In some instances the young physician relinquishes his profession, determining to resume it after a time; but, oftener, he attaches to it, some other pursuit, which is, generally, that of an apothecary. Both experiments are dangerous, and too often lead to the destruction of all professional prospects. It is far better for the young practitioner, however straitened may be his circumstances, to struggle on, with professional distinction exclusively in view; and the attention of the public directed to him as a physician and surgeon only. Society is not disposed to admire or regard a man, in more than one charac-

ter; and all who are candidates for public patronage, should present themselves in the character which they are most anxious to sustain. A young physician, moreover, is, in general, not qualified for any business but that of his profession; and incurs the risk of pecuniary embarrassments, whenever he attempts a vocation, to which he has not been educated. And this leads me to warn the young physician against contracting debts and liabilities. The young merchant may contract debts with propriety and advantage. His character for punctuality is a part of his capital, and should be used; but the only capital of a young physician is his reputation for professional learning, diligence, and fidelity. On this character he should place his sole reliance. All his efforts should be directed in its establishment; and whatever can interfere, with this important and difficult object, should be studiously avoided.

He who relies on his earnings for support, will be led, not only to practice economy, but to keep his accounts with accuracy, and to attend carefully to the collection of his debts,—habits that will exert a beneficial influence on his character and happiness throughout life.

I am aware, that much of what is contained in this essay, will be regarded as common place; but I cannot admit, that it is not ultimately connected with the dignity of the profession, and the prosperity of its members. The former, indeed, can only result from the latter. Hence all who desire the advancement of the profession, should labor to render those who practice it, respectable in all their relations to society. In proportion as this is accomplished, will the profession exert that influence to which it may justly aspire.

ART. II.—*Experimental Researches on the Properties and Functions of the Nervous System, in Vertebrated Animals.* By P. FLOURENS.—Translated from the French. By the JUNIOR EDITOR.

Since the interesting work of Mr. Charles Bell, in which, by a simplicity of experiment, and an ingenuity of reasoning, seldom surpassed, he has established the different origin of the

nerves of sensation, locomotion, and respiration, we have seen nothing on the subject more interesting, from its novel and curious research, than the work now before us. The author may be said to have pushed the investigations to which the discoveries of Mr. Bell so evidently led the way, into a much more extended field.

It is known even to the vulgar, that the nervous system in the animal economy, is subservient to sensation and motion, as well as to the intellectual faculties. But whether the exercise of these functions is to be referred to any peculiar part of the nervous system, or whether they reside in common, in the same part of the brain, had never been satisfactorily ascertained, until the experiments of our author. So long as physiologists confined themselves to abstract discussion, and vague analogies, the solution of the question was unsatisfactory to the great majority of readers. Experiments like those of the author, appreciable by all, and subject to no inaccuracy, could alone determine the fact.

So interesting is the nature of these experiments, that, horrible as they are from their cruelty, to all but confirmed vivisectors, we shall proceed to translate such parts of the author's work, as will give our readers an idea of the additions he has made to our stock of physiological knowledge.

In the course of his investigations, the author appears to have established very satisfactorily the following facts:—The nerves, the spinal marrow, and the tubercles, produce muscular contraction. The cerebral lobes are the seat of the will and sensation, and the cerebellum possesses a property which has not hitherto been recognized in physiology, viz., that of combining the motions of the muscles, in those movements in which joint action of different sets of muscles is necessary.

We have then three distinct parts of the nervous system, presiding over as many distinct functions. 1. The cerebrum, the organ of perception, volition, and the intellectual faculties. 2. The cerebellum combining and regulating those muscular movements, whose concerted action is necessary in locomotion, prehension, &c. 3. The spinal marrow, of which the *medulla*

oblongata is a part, and the nerves, the immediate agent of muscular contraction. An amimal deprived of its cerebral lobes loses its sensibility, and its intellectual faculties; but preserves its locomotive and prehensive faculties, unimpaired; deprived of the cerebellum, it preserves its sensations, but the muscles refuse to act in concert.

Not only does sensation and motion depend upon different parts of the brain, but sensation and the senses have a distinct location also. The ablation of the cerebral lobes destroys the sight immediately, but the iris still moves, showing that the retina retains its sensibility. The ablation of the tubercles at once destroys the mobility of the iris, showing that the optic nerve has lost its function. By the one operation, we destroy the sensation of seeing, by the other, the sense of sight.*

It was more difficult to ascertain whether the animal, by the destruction of the cerebral lobes, lost all the other senses. "The only suitable means," says the author, "of ascertaining this fact, but which in his opinion is infallible, is to preserve

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* The author, we think, has here fallen into an error. The organ which presides over sensation must, of consequence, preside over the senses also, which are but a modification of the former. The tubercles are the commencement of the spinal marrow, and consequently like it, the origin of muscular motion, as the author has clearly shown. When the brain is destroyed, the iris plays when an impression is made upon the retina, because the source of its motion is untouched; but when we wound the tubercles, we cut off the communication of the iris with the brain, and thus deprive it of its mobility, by destroying the source of muscular power. Even this event would not immediately take place, if the iris contracted under the direct impression of the rays of light, for the nerves retain the power of exciting muscular contraction, after their communication with the brain is cut off. It is probable that the sympathetic actions, like those of the iris, require the co-operation of some part of the brain, and hence, in order to their taking place, it is necessary that the origin of the nerve connecting them with the brain, should be entire, both that its relation with the rest of the nervous system may be unimpaired, and that it may carry back the cerebral influence to the sympathising muscle. It is therefore clearly wrong to speak of the remaining *sensibility* of the retina, unless by sensibility he understands the power of producing muscular action, which a nerve possesses independent of the brain. This signification, however, is an abuse of terms, which, however it may be sustained by the poverty of the French and English languages, has no precedent in either.

the animal as long as possible after the operation. The animal, once cured of the mechanical injuries which would accompany the ablation of the cerebral lobes, would recover by degrees those faculties which do not essentially depend upon these lobes."

The experiments which he has undertaken with this view, and which form the subject of the second memoir in this work, plainly show, that so long as the animals survive the ablation of these lobes, (and he has seen them survive a whole year,) they remain constantly asleep, that they use none of their senses, that they neither taste, nor smell what they eat, that they do not eat of themselves, nor do they seek for any thing; in a word, they have no wish, recollection, or judgment. The animals that have lost their cerebral lobes, have lost all their sensations, all their instincts, all their intellectual faculties, and consequently, the unavoidable inference is, that all the instincts, sensations, and intellectual faculties, reside in this part of the brain, exclusively.

These difficulties being removed, another question naturally arises, viz., whether these faculties, instincts, and sensations, since they occupy the same organ, all occupy the same seat, or whether they are distributed, each to its peculiar location.

In the second memoir, the author shows, that however gradual the ablation might be, and in whatever manner it might be conducted, the effect upon all the faculties, sensations, and instincts, was simultaneous, and that they were impaired and lost together. Consequently, the whole, combined, constitute one faculty, and reside in one organ.

In this chapter the author also shows that the cerebrum, the cerebellum, and the tubercula quadrigemina may lose a considerable portion of their substance, without losing the exercise of their functions. A result still more important is, that they may perfectly reacquire these faculties after they have been totally lost.

Another question of considerable importance, and agitated since the days of Hippocrates, is settled here; viz: what parts of the nervous system affect the same, and what the opposite

side of the body. The result of the author's experiments is, that the cerebrum, the cerebellum, and the tubercles, have an effect on the opposite side, and that the medulla spinalis and oblongata, affect the same side: from the combination of these different effects, and by the lesion of these different parts, we may explain all the possible cases of paralysis, whether they arise on the same side, with the injury, or on the opposite or whether they are or are not accompanied with convulsions.

Lastly, the author has proved, by an immense number of experiments, that these laws prevail in every class of vertebrated animals.

These are the points most important for their novelty and interest. They are supported in the work before us, by an infinite number of experiments, performed upon almost every variety of animal, within the reach of the author. Before detailing these experiments, we shall translate a part of the report of the committee of the *Academic pour les sciences physiques.*

This committee, consisting of Portal, Count Berthollet, Pinel, Dumeril, and Cuvier, after commenting upon some of the preceding parts of the work, in which we are less interested, proceeds thus:

"That we may better understand the facts which the author has ascertained, we will proceed, in a few words, to give a general description of these parts, and of their mutual relations to each other.

"M. Flourens has pierced the hemispheres of the brain, without producing contraction of the muscles, or any appearance of pain in the animal. He has elevated them by successive incisions, he has performed the same operations upon the cerebellum, and on some occasions he has removed both the cerebrum and the cerebellum, and the animal has in the mean time rested undisturbed. The optic thalami have been attacked in like manner without more effect. The iris did not contract, nor was it paralyzed. But when he pierced the tubercula quadrigemina, there was a commencement of trembling and convulsions, and these phenomena increased in proportion as he advanced deeper into the spinal marrow. The

puncture of these, as well as of the optic nerve, produced striking and prolonged contractions of the iris.

"These experiments correspond with those of Lorry. 'Neither the irritations of the brain,' says this physician, 'nor those of the corpus callosum, produce convulsions. The only part of the brain which has appeared capable, of uniformly and universally, exciting convulsions, is the medulla oblongata. It is this which produces them to the exclusion of all other parts.'

"They contradict the experiments of Haller and Zinn, so far as the cerebellum is concerned. But from what M. Flourens has seen, and has exhibited to us, it appears that these experimenters must have touched the medulla oblongata, without being aware of it.

"M. Flourens has concluded that the medulla oblongata and the tubercles possess (to use his own language) irritability; in other words, that they are conductors of irritation, like the spinal marrow and nerves, but that neither the brain nor cerebellum possesses this property. The author has also concluded that the tubercles are a continuation, and the superior termination of the medulla spinalis, and oblongata; and this conclusion is supported by the similarity of their functions, and their anatomical connexions.

"Wounds of the brain and cerebellum produce neither pain nor convulsions, and it is hence concluded, to use the ordinary language, that they are insensible. M. Flourens says that they are the sensitive part of the nervous system, meaning simply, that the impression made upon the sensitive organs must be transmitted to them before the animal experiences a sensation.

"M. Flourens appears to us to have fully proved this proposition, by a reference to the success of sight and hearing. When one cerebral lobe is removed, the animal loses the sight of the opposite eye, although the iris of this eye preserves its mobility, and when both lobes are removed, the animal becomes both blind and deaf.

"But we do not think the same has been sufficiently proved in relation to the other senses. He has made, and could make,

no experiment touching the sense of taste and smell; and as to the touch, his experiments do not appear to us conclusive. It is very true, that the animal thus mutilated, puts on the air of sleep, appears to have no volition, makes no voluntary movements; but if struck or pricked, it acts like an animal awake. In whatever position it is placed, it preserves its equilibrium. Laid on its back, it turns over, and walks if it is pushed. If a frog, it swims when touched; and if a bird, it flies on being thrown into the air, struggles when confined, and swallows water that is poured into its beak.

"It would certainly be difficult to believe, that all these actions were produced without sensation. It is true that they are not the effect of reason. The animal moves without design, he is void of memory, and repeatedly opposes himself to the same obstacle. This proves that, in the words of M. Flourens, the animal is in the condition of one asleep, or acts like one asleep; but we would be very far from saying, that a man who moved in his sleep, and knew to choose the most convenient position, could be void of sensation. That the perception is indistinct, and is immediately forgotten, is not proof that they do not exist. Thus, instead of saying with the author, that the cerebral lobes are the only organ of sensation, we limit ourselves by the facts observed, and content ourselves with saying that these lobes are the only receptacle by which the sensation of seeing and hearing can be complete, and become perceptible to the animal. If we wished to add any thing to this, we would say that in them the sensations receive their distinct form, and leave a permanent impression; that they serve as the place for the memory, and thus furnish to the animal the materials out of which its judgments are formed. This conclusion becomes the more probable, because independent of the confirmation it receives from the structure of the lobes, and their connections with the rest of the system, comparative anatomy furnishes additional proof, in the constant proportion which the size of these lobes bears to the degree of intelligence possessed by different species of animals.

"After these effects of the ablation of the cerebral lobes, M. Flourens has examined those of the tubercula quadrigemina.

The removal of these, causes blindness and involuntary motion of the opposite eye. If both are removed, the blindness is complete, and the motion of the eye more violent. Nevertheless, the animal preserves all its faculties, and the iris contracts. The profound section of the tubercles, or the section of the optic nerve, paralyzes the iris; from which M. Flourens concludes that the ablation of the tubercle produces an effect correspondent to the section of the nerve, and that this tubercle is but a conductor of vision, and that the cerebral lobe is the termination of the sensation, and the place where it is perfected and converted into a perception.

"It is to be remarked, that when the section of the tubercles is carried too deeply, it interferes with the spinal marrow, and gives rise to violent and prolonged convulsions.

"But the most curious and novel of the experiments of M. Flourens, are those which relate to the functions of the cerebellum.

"At the commencement of the ablation of this organ, a little weakness and want of harmony in the movements is manifested.

"As the section proceeds it manifests a more general agitation, the animal continuing to see and hear, makes hasty and irregular movements. The faculty of flying, walking, and of standing upright, is lost by degrees; and when the organ is entirely removed, the power of making regular motions is entirely gone.

"Placed on its back, it cannot rise; it sees the blow that menaces it, cries out, seeks to avoid it, and makes a thousand efforts for the purpose, without success. In a word, it preserves the faculty of perception, and volition, without the power of making the muscles obey its will. It scarcely succeeds in supporting itself upright, by supporting itself with the assistance of its wings and tail. By depriving an animal of its brain, it is placed in the condition of sleep; by depriving of the cerebellum, in the condition of intoxication.

"It is surprising (says M. Flourens) to see a pigeon, in proportion as it loses its cerebellum, lose gradually the power of flying, then that of walking, and lastly of supporting itself

upright, losing this last by degrees. It commences with being unable to support itself perpendicularly upon its legs, then its feet become insufficient for its support, and at last every fixed position becomes impossible; it makes incredible efforts to arrive at some such position, without success. And nevertheless, when, exhausted with fatigue, it appears to wish for repose, its sensations are so perverted, that the least motion causes it to recommence its contortions, without ever assuming the least convulsive movement, provided the medulla oblongata or the tubercles are untouched.

"We do not remember that any physiologist has pointed out any thing resembling these singular phenomena. Experiments upon the cerebellum of quadrupeds, and especially of adults, are attended with great difficulty, on account of the strong bony structure to be raised, and the blood vessels to be met with.—The most of experimenters, moreover, operate to support some previously conceived opinion, and see with little difficulty what they wish; but certainly no person will now doubt that the cerebellum serves, in some degree, to balance and regulate the locomotion of the animal. This discovery, if these experiments, repeated with the requisite precautions, shall be generally established, will confer very great honor upon this young operator.

"In conclusion, we think, that independent of unnecessary changes of language, and of known facts which the author was compelled to introduce, to give his work a systematic character, this memoir offers, respecting many ancient facts, more precise details than we were before in possession of, and that it contains others, as novel as they are important to science.

"The integrity of the cerebral lobes is necessary to sight and hearing, and when they are removed, the will no longer produces spontaneous movements. Nevertheless, when the animal is excited, it moves as if it sought, at the moment, to avoid pain or uneasiness; but these motions conduce to no object, very probably, because the memory, which has disappeared with the lobes that form its seat, affords no foundation or elements, for the judgment. These movements are not persevered in for the same

reason, because the impression which causes them, leaves neither recollection nor permanent volition. The integrity of the cerebellum is necessary to locomotion; while the brain subsists, the animal will see, hear, and have volitions very apparent and energetic; but if the cerebellum is removed, it cannot preserve the equilibrium necessary for locomotion. Irritability subsists a long time in parts without the brain or cerebellum being necessary to it. Every irritation of a nerve brings in action the muscles among which it is distributed. Every irritation of the spinal marrow puts in action the members situated below the point irritated. It is in the spinal marrow, throughout its whole length to the point where it terminates in the tubercula quadrigemina, that the faculty resides, of receiving and propagating irritations, on the one hand, and pain on the other. At this point at least, sensations must arrive in order to their being perceived, and from this point the commands of volition must set out.—Also the continuity of the nervous communication from this point to its distribution, is necessary to voluntary motion, or sensation, whether external or internal.

"These conclusions are not identical with those of the author, nor are they expressed in his language. But they are those which appear to us the most certainly to result from the facts which he has so well established. They will be sufficient to enable you to judge of the importance of the facts, and to induce you to testify your satisfaction, and to request him to continue to communicate the result of a labor so full of interest.

(Signed)

PORTAL, &c.

BARON CUVIER, Reporter."

After this detail of the opinions of the author, we might here perhaps with propriety close this article. But as the work has not been translated, and as the experiments are full of interest and novelty, we cannot resist the temptation of placing one or two of them, at length, before our readers.

The following experiments were made after the above report, in reply to some objections which it contained, to some of the author's conclusions.

"I concluded from my former experiments respecting the functions of the cerebral lobes, that these lobes are the only receptacle of the sensations.

"There were wanting, to render my position complete and irrefutable, first, direct experiments on the senses of taste and smell, and secondly, more conclusive experiments upon the sense of touch.

"Every person will at once see the extreme importance of preserving alive, for some time at least, the animals submitted to the experiment of extirpating the brain, in order to obtain the full benefit of the experiment. Of the loss of some senses, we may be immediately assured, but the loss of others can be ascertained only by closer observation. Thus it is certain that an animal deprived of the cerebral lobes can neither see nor hear, but how shall we be convinced that it does not smell or taste?

"If an animal, surviving an operation for several months, uses none of his senses, it is clear that he has lost them. If he does not smell, nor perceive the vicinity of food, it is because he has lost the sense of smell, and if the taste does not excite him to swallow food that is placed upon the tongue, or within the beak, it is because he has lost his taste.

"*Experiment*—I removed the two cerebral lobes of a fine and vigorous hen.

"This hen lived afterwards six entire months, in perfect health, and would have lived longer if, at the moment of my return to Paris, I had not been obliged to abandon it.

"During the whole of this time, I did not lose sight of her for a single day, but passed many hours of each day in making observations upon it; studying its habits, and noting its actions; and the following are the observations with which this long study has furnished me.

"Scarcely had I removed the lobes, before she suddenly lost the sight of both eyes. She heard nothing, and gave no signs of volition; but she stood upright, on her legs; she walked when pushed or irritated, she flew when thrown into the air, and swallowed water when it was poured into her beak; but she

moved only when irritated. When placed on her feet, she rested on her feet; when laid on her belly, in the position in which these animals repose when asleep, she rested in that position. Constantly was she plunged into a kind of stupor, which neither noise, nor light, but only positive irritations, such as pinching, blows, &c., could interrupt.

"Six hours after this operation, the hen took the attitude of a profound sleep, turning her neck backwards, and concealing her head under the feathers on the upper side of the wing. After leaving her in this position a quarter of an hour, I shook her roughly, and she started from her sleep, but scarcely was she awake, before she fell again into the same situation.

"Eleven hours after the operation, I fed my hen—opening her mouth and filling it with food, she swallowed it very well.

"The next day, the hen awoke a little from her sleep, and with all the actions which all these animals usually make on such an occasion. She shook her head, agitated her plumes, arranging her feathers and cleansing them with her beak, sometimes changing her foot, for she often slept on one foot, as birds not unfrequently do.

"In corresponding cases, one would say of a man asleep, who, without waking entirely, and half-asleep still, changes his place, reposes himself in another situation less fatiguing, stretches his limbs, &c., that he still sleeps.

"The third day, the hen was not as calm as usual; she walked about, but without motive or design; and, if she met with an obstacle, had not sense to avoid it, or turn back. She bore every mark of a violent fever, and I gave her large quantities of water. There was however no sign of convulsions, no irregularity in her motions, and two days afterwards, there was no sign of disease or fever. She became calm, and slept as usual.

"I omit many articles in my journal, and come at once to the second month. The hen enjoyed perfect health, and as I nourished her with great care, she became very fat. She sleeps always very much, and when she is not perfectly asleep, is drowsy.

"For several days past, the bony fragments exposed to the air have been exfoliating and falling off, and the cicatrix is healing rapidly.

"Five months after the operation.—I have never seen a fowl more fat. The wound of the skull is entirely healed, and a fine skin, white and smooth, covers the surface, and beneath this skin, an osseous covering which, although thin, is nevertheless solid.

"I have left this hen for three entire days, and have then placed grain at her nostrils; I have filled her beak with food, have plunged her beak under the water, and have placed her under heaps of corn. She has not smelled, swallowed, nor drunk; she has remained immoveable under the heap of corn, and would certainly have died of hunger, if I had not returned to my former practice of making her eat, myself.

"Twenty times, instead of grain, I have put pebbles into her mouth, and she has swallowed them as if they were grain.

"Finally, this hen has frequently encountered an obstacle with her feet: she strikes against it, and the shock arrests and staggers her, but to strike against a body is not to feel. She never feels, nor gropes, nor hesitates in her walk. ☞ Thus, then, the hen, without the cerebral lobes, has really lost, with the sight and hearing, the smell, taste, and touch. Nevertheless, no one of these senses, or to speak more accurately, no one of the organs of these senses, has been directly injured. The eye is perfectly clear, and the iris moveable. Neither the organ of hearing, nor smell, nor taste, nor touch, has been touched.—Curious fact! There are no sensations, although the organs of sense remain entire. Is it not clear, therefore, that in these organs sensation resides?

"She has lost all her instincts; for she eats nothing, to whatever fasting you expose her; she rejects nothing to whatever excess you may feed her, she never defends herself against other fowls, she knows neither to flee nor to contend; there are no sexual propensities, for the caresses of the male are indifferent or unperceived.

"She has lost all intelligence, for she neither wishes, nor remembers, nor judges."

"I shall add to this case, that of a hen, rendered blind by the extirpation of the tubercula quadrigemina.

"When completely deprived of sight, this hen, for three or four days after the operation, went and came, heard, recollected, sought nourishment, selected it every evening, about the same hour, clambered up on the same table to rest, received the caresses of the male with pleasure, and in walking, advanced with so much precaution, that she seemed to perceive the objects before she touched them.

"She pecked while walking about, and in pecking recognized a good grain, and swallowed it—the bad she rejected.

"She recollected very well the places where her food was usually placed, and the hour of feeding; and she did not fail to repair to the spot when hungry. If the food was displaced, she never rested until she had found the new situation in which it was placed.

"In a word, this curious animal conducted herself, under all circumstances, with an intelligence, the more refined, the more persevering, and the more manifest, in consequence of having lost her sight; being compelled, in consequence of this loss, to supply this defect with all the resources which the other senses, guided by her intellectual faculties, could supply.

"Nothing proves better than these two cases, the contrast, perfect in all respects, between the hen deprived of her tubercles, and the one deprived of the brain; that in losing the first, nothing is lost but the sight, and that in losing the second, or the contrary, all the sensations, and all the intellectual faculties are destroyed.

"To submit this contrast to a new proof, I extirpated the two lobes from two pigeons, and the tubercula quadrigemina from two others. These four pigeons I placed in the same apartment, which I took care to have well supplied with provisions. The two first pigeons died of hunger, the other two knew well where to find their food, to select, and to eat.

"I removed from a hen the right cerebral lobe, and immediately she lost sight of the left eye; I then removed the left tubercle, and she lost the sight of the right eye.

"This hen, thus rendered blind by the extirpation of the cerebral lobe on one side, and of the tubercle on the other, survived three months. She heard well, gave evident signs of intelligence, of volition, governed by reason; she walked but seldom, and when urged to walk, stepped with extreme circumspection, her head stretched, her neck fixed, and her whole body attentive to the slightest impression of external bodies. She also knew where to find her nourishment, and to select it; consequently, she could feed herself.

"I could have objected to the preceding experiments, that they are not conclusive, as to the sense of smell, since the olfactory nerves in which this sense resides, always lose their branches by the complete extirpation of the lobes of the brain.

"I therefore removed the two lobes of the brain from a hen, guarding, with great care, the inferior layers of these lobes, which the branches of the olfactory nerves adhere. This hen thus mutilated, lived for six months, and during this time, I paid great attention to the experiment, without being able to ascertain in her conduct, the least evidence of the existence of this sense.

"This hen neither pecked, nor ate, nor saw, nor heard, nor gave any indication of a will, nevertheless, a sudden impression always roused her; and this impression, if sufficiently strong, produced movements regular and connected.

"But these movements, however regular they might be, were always without object, and without result, either, because the impression, from the want of the cerebral lobes, was not converted into distinct sensation, or perception, as I suppose; or M. Cuvier appears inclined to think, the impression, although perceived, did not leave a recollection, or a lasting impulse, very probably, because the memory which disappears with the lobes, that are its seat, did not furnish the foundation nor the elements for the judgment to act upon.

"It is known that birds almost always seize their food by the

extremity of their beak, before eating; but not only do birds deprived of their cerebral lobes, not do this, but they do not eat at all; they do not even peck.

"It is also known, that carnivorous animals, have a habit of running from side to side, smelling every thing; but those that have lost their cerebral lobes, do not smell at all.

"When an animal uses none of its senses, it is to be inferred that it does enjoy them. An animal does not see, when it dashes against every thing it meets; it does not hear, when no noise moves it; it does not smell, when no odour attracts or repels it; it does not taste, when no taste pleases or disgusts it; it does not feel, nor enjoy the sense of touch, when it distinguishes no obstacle, but dashes indiscriminately against all. An animal which feels a body, must, of consequence, form a judgment, and conversely, an animal which does not judge, does not feel.

"Animals deprived of their cerebral lobes, therefore, have neither sensation, nor judgment, nor recollection, nor will; for they cannot will without judgment, nor judge without recollection, nor recollect without having had a sensation. The cerebral lobes, therefore, are the exclusive seat of all the sensations, and all the intellectual faculties.

"The following experiments are intended to settle the question, whether all these faculties occupy concurrently the same seat in these organs, or whether they have each a distinct location.

"I removed from a pigeon, by successive and careful sections, all the anterior portion of the right cerebral lobe, and all the superior and middle portion of the left. The right was gradually weakened, as I advanced, and was not entirely destroyed, until the removal of the layers, near the centre of the two lobes; but the moment that the sight was destroyed, the hearing was lost also; and with the sight and hearing, all the intellectual and sensitive faculties.

"I removed from another pigeon, by successive and careful sections, all the exterior and posterior of the two cerebral lobes, even to some lines of the substance of the corpus callosum. In

proportion as the ablation advanced, the sight was gradually and sensibly weakened; the hearing was impaired with the sight, the other faculties with these, and when one was entirely destroyed, they all were.

"The experiment in which the extirpation was commenced, from above, resembled the preceding in its consequences. Consequently, a considerable portion may be cut away from any part of the brain, without destroying its functions. A limited portion of these lobes, therefore, suffice for the exercise of their functions.

"In proportion as the ablation proceeds, all the functions are impaired, and when certain limits are passed, they are all at once destroyed. The cerebral lobes, therefore, concur throughout their whole substance, in the full and entire exercise of all their functions.

"Since when, one of the faculties is lost, all are lost; and when one of the sensations is lost, all are lost, there cannot be different seats for the different faculties or sensations. The faculty of perceiving, of judging, and of wishing one thing, resides in the same place with that of perceiving, judging, and wishing another thing; and, consequently, this faculty, essentially one, resides in one single organ.

"The different organs of the senses have, nevertheless, a distinct origin in the brain. It has been seen already, that the principle of the action of the retina, and of the play of the iris, proceeds from the tubercles. In like manner, the senses of smell, taste, and sight, have their peculiar origin in the particular parts of the brain, which gives rise to their nerves. We may therefore, by destroying each of these separate origins, destroy all the senses, and again, on the contrary, we may destroy, if not all the senses, at least all perception of them, by the destruction of the central organ, while these sensations are consummated.

"We have already shown, that it is possible to remove a certain portion of the lobes of the brain, without entirely destroy-

ing their functions. We shall now show that they may recover their functions, after they have been completely destroyed.

"Experiment 1. I removed from a pigeon the central part of the two lobes of the brain, by gradual cuts, stopping as soon as I saw that the senses and intellectual faculties were destroyed.

"The first day, the two mutilated lobes swelled enormously, but the swelling subsided on the second day, and on the third, had nearly disappeared.

"The pigeon commenced from that time to recover by degrees, its sight, hearing, judgment, volition, and other faculties. In about six days it had recovered them all, and what should not be omitted, as it recovered one, it recovered the whole.

2. "On another pigeon, I carried the mutilation a little farther. The animal lost, as in the preceding case, all the sensitive and intellectual faculties, but never recovered them perfectly.

3. "On a third pigeon, I carried the mutilation still further, and all the faculties were destroyed, without returning.

"Thus it appears, that if the destruction of the lobes does not exceed certain limits, the lobes recover after a time, the exercise of their functions; if carried beyond these limits, they recover imperfectly, and if carried still further, they never recover. Further, when one sensation returns, all return, and when one faculty is renewed, all are renewed.

"I removed, by successive sections, all the superior half of the cerebellum of a young cock.

"The animal lost immediately its firmness, and the regularity of its movements, and walked in a staggering and ludicrous manner.

"Four days afterwards, the equilibrium was less disturbed, and he walked with more firmness and confidence. Five days afterwards, he was perfectly restored.

"I removed from a pigeon, a little more than half of the cerebellum, and cut it away entirely from a hen. After a short time, the pigeon recovered his equilibrium entirely, but the hen did not, although she survived the operation more than four months.

"I removed the superior layers of the tubercula quadrigemina of the right side, of one pigeon, and of the left of another. On the fourth day, each of these pigeons saw a little with the eye that had been lost; the sight improved daily, and after some days, recovered perfectly.

"The tubercles, therefore, and the cerebellum, partake in common with the cerebral lobes, the faculty of recovering their lost faculties, and of recovering them, although they themselves are not entire.

"In conclusion, we may remark, that this perfect destruction of the function of an organ, in consequence of the removal of a part of the organ, and the restoration of the functions in consequence of a part being permitted to remain, proves clearly, that each of these organs forms one simple organ; for the injury of a part, impairs the whole, and the preservation of a part leaves room for the restoration of the whole."

Wounds of the brain.—Wounds of the brain readily heal. Passing over the author's experiments, we shall simply give one or two circumstances, which appear to us not destitute of interest.

"Longitudinal wounds of the cerebral lobes, whatever may be their situation and extent, readily heal with an entire restoration of their functions; but transverse sections, in some situations, and of sufficient extent, never heal. All wounds of the cerebellum, on the contrary, heal perfectly. This difference is readily accounted for, by the different manner in which these organs are attached to their crura in animals. The position of the brain is such, that a transverse section may separate one part entirely, and the part thus separated dies. With the cerebellum this can never take place."

M. Flourens asserts, that the restoration of substance, which has been said by some, to take place, in wounds of the brain, never occurs. This error has probably arisen from the enormous tumefaction, which we witness in wounds of the brain—a tumefaction which would lead one to say, that the more we cut off, the more it expands. But as soon as the tumefaction disappears, the parts return to their natural volume, and it may then

be clearly seen, that the parts which have been removed are wanting, as long as the animal survives the operation.

The author has made many experiments, for the purpose of ascertaining what parts of the nervous system, influence the same side of the body, and what influence the opposite side. The following is the sum of his observations.

"When one side of the brain or cerebellum is injured, paralysis takes place on the opposite side. If one side of the medulla spinalis or oblongata is wounded, there will be, according to the extent of the injury, paralysis, or convulsions, of the same side; a wound of the tubercula quadrigemina produces convulsions or paralysis of the opposite side.

"When one cerebral lobe and the corresponding side of the medulla oblongata are injured at once, there will be paralysis of the opposite side, and convulsions [or paralysis] of the same side. If one side of the cerebellum, and of the medulla oblongata are wounded, the symptoms will be as before."*

These cases will include all the possible combination of symptoms, which may arise from injury of these parts.

The most important position which the author has established, in this work, is the fact, that the concert of muscles, combining to produce a definite motion, is regulated by the cerebellum. Of this fact there seems to be no doubt, if the experiments can be at all credited. The animal, after the loss of the cerebellum, still retains the power of moving the muscles; but is utterly incapable of combining their movements to any useful purpose.

There are, however, other combined movements, which are not under the control of this organ. The motion of the muscles, supplied by the *respiratory system* of nerves, is of this class. The concert of these muscles is independent of the cerebellum; and the author distinguishes them by the name of *movements of conservation*, and locates the centre of their action, in the spinal marrow. Their motion is produced by a local irritation, acting like that which produces the contraction of the iris, at a dis-

*The symptoms here, are different from what the preceding experiments would lead us to expect, viz: a paralysis of one side, and the loss of the concert of the muscles of the other.

tance from the affected muscle, and differing from the local irritation which produces the involuntary contraction of other muscles, in requiring the communication with the medulla oblongata, to be reserved as the medium through which the sympathetic impression is communicated.

The author has ineffectually endeavoured to arrange, under the same head, (*mouvemens de conservation*,) the muscular efforts, by which the equilibrium of the body is preserved. It was essential to his system, that they should not be considered as voluntary motions, since they take place when the cerebral lobes are removed. The author, we think, has unnecessarily involved himself in a difficulty, from the want of making a proper distinction between volition and the will. The former is, we suspect, purely an animal faculty, having very little connection with the intellect. The faculty of preserving the equilibrium, seems to form a link between the purely voluntary motions, and the respiratory muscles, as these last seem to be placed midway between the voluntary and involuntary muscles.

In taking leave of the author, we cannot avoid remarking the great contrast between the experiments of the author, and those of Mr. Charles Bell, in a similar investigation,—a contrast which prevails very generally, between the investigations of the French and English Physiologists.

In the former, we witness a passion for the knife, amounting to infatuation—as if nature would continue her operations uninterrupted when her recesses were exposed to vulgar observation. The sources of error in this mode of investigation are innumerable, and the difficulties of drawing positive conclusions are so great, that we cannot help being surprised at the air of assurance, with which these gentlemen jump from an experiment to a conclusion. As an instance of this rashness of induction, we would notice the facility with which the author proves that the brain is a simple organ, and that volition, sensation, and intellection, are its functions, having all a common residence. He removes the cranium, and cuts away the brain by slices, encroaching by degrees upon the domicil of wit, humor, fancy, intellect, dwelling in delightful harmony with the social and do-

mestic affections, and doubtless, seriously incommoded with the unwelcome vicinity of the grosser animal appetites. As the enemy encroaches upon the seat, where, snug within the recesses of the cranium, they have heretofore flourished, they pine away and die together; but if, perchance, their habitation should not be rendered perfectly untenantable, they collect again around the family altar, as soon as the first alarm subsides, and apportion the remains of the dilapidated building, with a due regard to the rights of each.

Now, to this summary conclusion, there are some serious objections. First, we have not the convenient mode of ascertaining the existence of intellectual faculties, that Milton's angels possessed, and consequently, if the mutilated chicken was not in a very communicative mood, it would be difficult to say how much they were disturbed by the operation: Secondly, the facts are very inconsistent with what we daily observe in diseases of the brain—mania, partial apoplexy, &c. Lastly, there is very great reason to doubt whether this gradual loss of the mental faculties may not be owing to the sympathetic influence of such severe wounds, and consequently whether the experiment may not be entirely inapplicable.

We confess that we are among those who think that this wanton infliction of animal suffering is to be deprecated; nor can we believe that experiments of wanton and unnecessary cruelty, can be conducted without injury to the social virtues.

We question very much whether the labors of Bichat and Legallois, in this field of observation, have advanced very materially the cause of physiological science, and still less do we believe that, if their contributions to the science had been much greater than they are, that the ultimate objects of science would have been at all advanced by them.

What have we gained by the millions of animals which the disciples of this school have submitted to tortures, from which every unsophisticated person turns with horror. Prompted by the love of novelty, we may tolerate a few judicious experiments of this kind, in an original mind that can turn them to good account. But, the information we gain by them is ex-

tremely limited, indefinite, and uncertain, and but poorly compensates for the labor and time bestowed upon them; and when the few principles to which they lead are established, it argues neither good sense nor good taste unnecessarily to repeat them.

ART. III.—*History of a Case of Hydrophobia, not arising from an ascertained cause.*—By DANIEL DRAKE, M. D.

The symptoms, termination, and morbid appearance, on dissection, of the following case, prove it to have been true hydrophobia; (*rabies;*) and, still, the unfortunate young man had not been bitten by an animal of any kind. The case seems, therefore, worthy of being reported.

The patient, Josiah Morehead, jr., by trade a tanner, was 23 years of age. On Sunday, the first of May, 1831, complained of feeling unwell, without indicating to his friends any particular symptoms, except a general muscular soreness, and oppressed breathing. On Monday morning, said he had not rested well the night before, and did not rise as usual. At seven o'clock, his mother carried him a cup of coffee. On taking the saucer in his hand, and carrying it towards his lips, he jerked his head back; and after making two or three unsuccessful efforts, concluded that the steam made him start. The coffee was then cooled, and offered to him again, but with the same result; and the repetition produced some slight spasms of the muscles of the upper part of the body. Neither he nor his friends, at this time, seem, however, to have thought of hydrophobia; but Dr. Woolley was immediately called in. Finding his pulse active, and his tongue furred, the doctor bled him to 16 or 20 ounces, and ordered him 30 grains of calomel, incorporated with powdered sugar. He was calm and rational; but it was not without much difficulty, that he succeeded in licking up and swallowing, in the most gradual manner, the dry powder. His spasmodic agitation increasing, Professor Cobb, Dr. Robert Moorhead, and myself, were sent for, and first saw

him about the middle of the day. The experiment of offering him drinks was repeated, in our presence; but he could not suffer them to approach his mouth; and the attempt excited most painful and universal agitation, attended with sudden screams, and great, but undefinable alarm. His pulse was rapid. No delirium existed, and he made constant efforts to keep himself composed. The question of hydrophobia having been started in the family, he was, for the purpose of tranquilizing his feelings, assured that he did not labor under that disease. An enema was ordered, which agitated him very much, and with difficulty he succeeded in swallowing a dose of calomel and opium, in powder. In the afternoon, he lost about 30 ounces of blood. At bed time, a considerable degree of emphysema was discovered near his clavicles, and on the sides of his neck. Through the night, he took a quantity of sulphate of morphia with sugar.

On Tuesday morning, we found that he had slept none. The calomel had operated once or twice, copiously. His agitation and sudden startings were somewhat mitigated, but the water-dread was unabated; and after repeated trials, having the fluid both in open and covered vessels, we gave up all further attempts. In these experiments, his own exertions were great and persevering. He would carry the vessel, slowly and obliquely, towards his mouth; but as it approached his lips, his head would suddenly recede, his countenance assume an expression of alarm and horror, and the muscles of his chest, neck, and arms, generally, take on a spasmodic action, producing an exceedingly embarrassed respiration. His breathing was, indeed, constantly straitened, and, occasionally, he coughed; which, taken in connexion with the external emphysema, suggested the possibility that a lesion of the bronchia had taken place; which, permitting the extravasation of air in the neighborhood of the œsophagus and trachea, might, *possibly*, occasion dysphagia and dyspnœa. Under this impression, I attempted, in the afternoon, to examine him with the stethoscope; but, notwithstanding his utmost efforts to lie still, the touch of the cylinder excited so much flurry, that no successful observation

could be made. No further administration of medicine was now attempted, but cupping beneath the clavicles was ordered. Very little blood was drawn, and the operation greatly increased his spasmodic agitation. Before night, he started incessantly, in the utmost terror; the slightest touch, even of his hair, would excite a universal muscular contraction—greatest, however, in the muscles of respiration—and it became necessary to surround his bed with several resolute persons, to keep him in it. He frothed at the mouth, but manifested no disposition to bite, and retained his senses so perfectly, as to be conscious of his approaching end, and make rational, Christian preparation to meet it. Two or three hours before his death, he shook hands with his friends, and bade them farewell; not long after which, his agitations began to subside, and it soon became obvious that he was *in articulo mortis*. He expired about 8 o'clock in the evening, 36 hours after the dread of water first manifested itself.

EXAMINATION OF THE BODY 19 HOURS AFTER DEATH, BY PROF. COBB, IN THE PRESENCE OF SEVERAL MEDICAL GENTLEMEN.—Corpse stiff. Complexion, a dark sallow. Extensive emphysema of the subcutaneous parts—greatest, about the throat and neck, but extending to the shoulders and the whole of the chest. On raising the sternum, which led to no escape of air, the cellular tissue of the anterior medrastinum was found in the same condition, as was, also, the cellular substance around the trachea and œsophagus. Considerable portions of the pericardium, and of the pleura covering the diaphragm, were dry. The lungs collapsed, and were not emphysematous, except a small portion near the heart. The mucous membrane of the larynx, trachea, and bronchia, was highly inflamed, and covered with frothy mucus. No orifice could be discovered, through which the air had escaped. The heart was sound. The lining membrane of the pharynx, like that of the trachea, was inflamed; that of the œsophagus healthy; that of the stomach nearly natural, but the organ contained a pint of dark colored fluid, though he had drunk nothing for 48 hours. Most of this was, *perhaps*, the secretion from the trachea and bronchia.—

The liver, spleen and pancreas were healthy. No other parts the body were examined.

The phenomena and morbid anatomy of this, as of most ca of hydrophobia, show that the parts which are supplied by t nerves of respiration, were the chief seats of the disease. Thus, the muscles affected with spasms, were chiefly the re ratory; the emphysema was confined to the chest and ne a great deal of dyspnœa, from spasmodic action, was prese throughout the whole course of the disease; and, on dissecti the mucous membrane of the pharynx, larynx, trachea, a bronchia, was found to have been inflamed. The late Pro sor Dorsey has reported, in the Medical Museum, Vol. 4, a ca which proved fatal under circumstances, that suggested those who saw it, the opinion, that the patient died from clos of the rima glottidis by spasmodic action.

The learned authors of the Dict. de Sci. Med., art. *Ro* hold the following language in reference to the seat of t malady:

"The scalpel carried into the aerial passages—the larynx, trach and bronchia, discloses traces of inflammation, which are the m manifest, the further we descend into the organ. In the bronch ramifications, the mucous membrane has the color of the lees wine. In four dissections, we found frothy mucus in the bronch and either in the larynx or trachea. This mucus was mixed wit little blood in the bronchia of one of these subjects, while it was white as snow in another."

Other parts, according to these gentlemen, are genera free from the traces of disease.

The aerial passages, then, are the seats of the frothy dischar from the mouths of rabid animals; and this froth constitutes t virus that propagates the disease. If it should happen not be present in the mouth of the animal at the moment when bites, the malady will not be communicated.

If we regard the disease with which Morehead died, as a ca of true hydrophobia, how can we explain its origin? Did arise independently of the infection of a rabid animal? H such a case as this, ever thus arisen, in the human subject, in any animal, not of the natural orders, which embrace the

dog? This question, it would seem, must be answered in negative. In reference to the present case, the only explaion which has suggested itself to my own mind, or to that of colleagues, is the following.—For the last year, canine dness has been, in some degree, endemic in and around Cinnati. At least one person, has died in an adjoining county, m the bite of a mad dog; and many domestic animals have n lost from the same cause. The skin of one of these, hav- the hair besmeared with the frothy discharge from the ani- l's mouth, had probably been taken to the tannery, where young man was an operative. Six or eight weeks before death, he was burnt on one of his fingers, and at the time of attack, the sore was still covered with a scab. To this sore infection, thus conveyed, might have been applied, and ocioned the disease.

But to this theory of its origin, may be opposed the prevailing ief of the profession, that the morbid secretions of herbivorous imals, cannot communicate the disease. Is this, however, the t? Is not the testimony on this subject chiefly negative, and erefore, inconclusive? I am not aware, that animals which do bite when angry, are prone to do so, when affected with hyophobia; and hence, the possibility of their communicating disease may not have been demonstrated. The secretions their mucous membranes, inflamed in hydrophobia, may be isonous; but are not likely often to be inoculated, simply, beuse such animals are not prone to bite. If the discharge m the mouth of a man affected with true hydrophobia, can cite the disease, I see no conclusive reason, why that from an imal purely herbivorous, may not. The communication of e vaccine disease from the cow to the human subject, and the rtality of dogs and cats, during the prevalence of certain epimics among our species, indicate conclusively, the existence several identities between the human race and certain gera of the lower animals. It has been questioned, however, hether the bite of a rabid man *can* communicate the disease. ut from the dread which this malady inspires in all who are lled to the bed-side of such patients, as well as from the care and

solicitude of the infected, it is not probable that they have often attempted, or been allowed, to bite others. Moreover, the following experiment, by two distinguished physiologists, would seem to establish the affirmative of the proposition:

"On the 19th of June, 1813, in the Hotel Dieu, of Paris, Messrs. Magendie and Brechet, impregnated a bit of linen rag, with the saliva of a man who died of hydrophobia, a few minutes afterwards; and, carrying it about twenty paces from the bed-side of the patient, inoculated two dogs with it. One of them went mad on the 27th of July, and bit two others, of which one became rabid on the 26th of August."—*Dict. des Sciences Medicales, Art. Rage.*

From this experiment, conducted in presence of a class of medical students, I feel justified in concluding, that the discharge from the mouth of a rabid man, may be infectious, and, by analogy, am led to believe, that herbivorous quadrupeds may, likewise, propagate the disease. If that of the unfortunate patient, Morehead, was not thus excited, I can offer no explanation of its origin.

A few weeks after its occurrence, I heard of a case, which, from report, seemed likely to throw some light on this obscure subject. A fisherman, named Clark, was said to have been bitten by a rabid horse, and actually to labor under hydrophobia. He was in the care of several of the "Steam, or Botanical Doctors," who have, for the last few years, been epidemic in the northern and western states. Obtaining permission to visit the patient, I saw him three times, in company with other medical gentlemen; and satisfied myself, as they also were satisfied, that his disease was not hydrophobia. Several months before, in attempting to drench his horse, which was said to have been bitten by a mad dog, he received a slight wound, which gave him great alarm, and excited in his system, a decided state of nervous irritation. All his sensibilities became morbid, and distressing apprehensions of the result, were awakened and sustained. A species of hysteria, in short, was the consequence; and in this condition, he at last took to his bed, and summonned the "steamers," who, for two or three weeks, surrounded him with hot bricks, and drenched him with a decoction of lobelia inflata, which, with various other medicated draughts, he

drank without difficulty. The case, if it proved any thing, went to support the opinion, that an herbivorous animal cannot communicate the disease.

Cincinnati, September, 1831.

ART. IV.—*Notes of a Fatal Case of Quiescent Gall Stones.*—By DANIEL DRAKE, M. D.

The subject of this report was M. L., a gentleman 76 years of age. His life, for the first half, was one of activity and hard-hip—great part of it being passed on the ocean: for the remaining portion, his pursuits were sedentary. For most of the former period, he was accustomed to the daily use of ardent spirits; during the latter, up to the time of his death, he discontinued their use, and did not even substitute wine. His diet was generally temperate and simple; and still, for 30 or 40 years of the latter part of his life, he was corpulent; and did not begin to emaciate till two or three years before his death.

At the age of 40, or thereabouts, he became afflicted with gout, which continued to return upon him every winter, till within two or three years of his death. It was often severe, affecting his toes, knees, and head. Not far from the same period, he was seized with diarrhœa, which afflicted him, through the whole of that long period, to the time of his death. He was subject, for several years, to extraordinary paroxysms of gastric flatulence and eructation, which were more certainly relieved by a draught of warm water, than any other remedy. He never vomited, till near the close of life. He was not subject to colic; nor ever experienced an attack of jaundice. He once had an attack of ague and fever, when comparatively a young man. In all the latter years of his life, the diarrhœa constituted his greatest affliction. It was but little under the control of medicines, or dietetic methods of any kind. Eighteen months or two years before his death, he began to lose flesh, and his emaciation continued to increase up to the day of his

death, when it was extreme, especially in the organs of the abdomen. The contrast between the extended basis of the thorax, and the size of the abdomen was the most striking I have ever seen. For some weeks before his death, the diarrhœa was so incessant, that he would rise 40 or 50 times in the 24 hours. The discharges were generally composed of yellowish water, with great volumes of gas. For two or three weeks before his death he had perpetual nausea, and sometimes, vomited bile. He also complained of an incessantly bitter and most offensive taste. His tongue was slightly furred. His pulse was, at no time, for the last few weeks of his life, in a state of excitement; but, the reverse—weak and slow. He could lie on his back, and on either side. His abdomen was carefully examined, but nothing appeared, except extreme atrophy of the organs.

I was unable to form a satisfactory opinion as to the kind of irritation which kept up the peritaltic action. The liver evidently secreted and threw out bile, the mesenteric glands were not enlarged, and he did not discharge pus from the bowels. My efforts to arrest the diarrhœa, were ineffectual, and the patient desired a consultation. Drs. Marshal and Staughton were called in. They were equally at a loss with myself. We pursued a routine and empirical practice—giving, in succession or combination, minute and even considerable doses of the pil. Hydrargyri and Calomel—small doses of Ipecacuanha—the Cretacevus Mixture—Acetate of Lead—Tincture of Kino—the Sulphate of Quina—decoction of Peruvian Bark—Sulphate of Morphia—Laudanum, and solid Opium—with external irritation to the epigastrium, and a liquid diet, of which fecula and gluten were the basis. An emetic was also administered, and two or three times he took an active cathartic. But the whole proved entirely unavailing. The diarrhœa continued to increase, and his flesh and strength to diminish, until, at length, on the 13th of July, 1831, he expired.—For many years before death, his temper was gloomy, discontented, and unhappy.

Appearances on Dissection.—Leave having been freely granted, to examine the abdominal and thoracic viscera, it was done on the next day after death.

The great degree of emaciation, of which I have spoken, was more particularly evident in the abdomen, and yet, a considerable stratum of adipose matter, was found between the skin and abdominal muscles. The omentum was extremely attenuated; and the viscera, generally, exhibited a corresponding atrophy. The small intestines had sunk into the pelvis. The mesentery, free from tubercular induration, but presented a dirty, yellowish-green color, which contrasted strongly with the engorged veins that were creeping over its surface. The colon was contracted into a tubular cord, and wore a shrivelled appearance. The spleen was small, but healthy. The pancreas was sound. The mucous membrane of the stomach and intestines throughout, was *entirely free from ulceration*, and displayed no remarkable color, except in the greater curvature of the stomach, which was engorged. They abounded in mucus, and contained a considerable quantity of healthy bile. In several places their parieties were unusually tender, and appeared to have been slightly inflamed. The liver was rather small, but totally free from disease. *The gall bladder was elongated, and thinned in its parieties. On touching it, the existence of numerous biliary calculi, angular, and greatly indurated, was at once apparent. By shaking the liver, their rattling was so loud, that it is a matter of astonishment, that the patient had not sometimes heard them, when alive and in motion.*

The lungs were sound. The heart was unusually small; but healthy, except a slight deposit of osseous matter, on the edges of the semilunar valves. There were no urinary calculi.

Examination of the Calculi.—This was made by Mr. Shotwell, one of my pupils. The cystic duct was permanently contracted, nearly to obliteration. The cyst contained a little slimy fluid colored with bile. Its inside exhibited but little appearance of a mucous membrane, being nearly smooth.

The calculi were seventy-three in *number*, and varied in size, from that of a pea, to that of a hazle nut.

The *form* of nearly the whole, was a tetrahedron, or solid triangle, a figure which a few of them affected with surprising accuracy; while two or three approached nearly to the cube. In all cases, the angles rounded.

Their *surface* was polished, and soapy to the touch.

The *color* bore a resemblance to some varieties of serpentine—consisting in greenish-yellow clouds, inserted into a dark-brown field.

Such as were examined internally, exhibited a concentric, lamellar *structure*, except the centre, which was homogeneous, irregular, and nearly black.

They were *fractured* by a gentle blow, and could be easily acted on by the nail.

Their *specific gravity* was such, that they all sunk in alcohol; but most of them swam in water. The few that sunk, after some time, became surrounded with a multitude of minute, adherent air bubbles, and rose to the surface.

They were *insoluble* in water, alcohol, or oil of turpentine. In the flame of a candle, they *burnt* like sealing wax.

In *taste*, they were insipid.

In the *Dictionaire des Sciences Medicales*, Art. CALCULS BILIAIRES, we have the following classification of Gall Stones:

"The biliary calculi, hitherto examined, may be divided into four classes: 1st. Those which present a white color, are crystalline, brilliant, lamellar, and composed entirely of adipocire. 2d. Those which are composed in part of that substance, and in part of a brown substance, which appears to be nothing else than inspissated bile: they are polygonal, and their color is a greyish brown. 3d. Those which seem to be formed entirely of concrete bile. 4th. and lastly, non-combustible calculi, but which are nevertheless consumed little by little, when exposed to an intense heat.

The gall stone of the first class, has generally an ovoid shape; its volume never exceeds that of a pigeon's egg, while its common size is that of a sparrow's; however, Saye found one in the gall bladder of a woman, nineteen years old, which was equal to a hen's egg.—(*Jour. des Sav., Sept.* 1697.) The cyst rarely contains more than one of this species; nevertheless, Dr. Merat has mentioned in his memoir, on Adipocire, (*Soc. Med. d'Emul.*) the case of a woman in whose gall bladder he found eighty-three.

The calculi of this class have a white color, a little yellow on the exterior: their interior structure is lamellar, crystalline, and in shining plates or striæ: their weight is less than that of water: exposed to a high temperature, they soften and melt: they are insoluble in water: hot alcohol dissolves them, but on cooling, the matter is deposited in brilliant laminæ: they are equally soluble in spirits of turpentine, and the caustic alkalies,—in the last case the solution having all the properties of soap.

Calculi of the second class, are always found in great numbers, a circumstance that necessarily affects their form, which is generally triangular, with the edges and points rounded; their specific gravity is very variable. [*Thomson and Bostock.*] The former has analyzed many, which constantly sunk in water: their exterior surface is smooth and soft to the touch; they are formed of concentric laminæ, arranged with small rays inclining towards the centre. The composition of this species, differs from the last, in this only, that they always contain a brownish ingredient, which possesses most of the characters of the resin of the bile.

The gall stones of the third class, are most frequently found in animals, particularly the ox, but sometimes in man.—(*Thenard. Mem. d'Arcueil.*) They are composed of inspissated bile: their figure is irregular; they have a bitter taste, and sometimes considerable hardness.

Haller and Saunders, are almost the only persons who have spoken of calculi of the fourth class: they are insoluble in alcohol, and the oil of turpentine. Some of them are uninflammable, but will redden and consume like charcoal."

Remarks.

1. The calculi taken from the gentleman, whose case is here reported, evidently belong to the second class, of the preceding arrangement.

2. They had probably been formed soon after he changed his habits, from active to sedentary, more than thirty years before his death. What connexion their formation might have had with his arthritic diatheses, I am not prepared to say.

3. It is worthy of remark, that they occasioned no disease of the liver, nor even one attack of jaundice.

4. The sympathetic affections which they excited, were paroxysms of gastrodynia and flatulence, chronic diarrhœa, depression of spirits, and, ultimately, great emaciation.

5. It is probable, that many cases of chronic diarrhœa, which resist all kinds of remedies, and are supposed to depend on ulceration of the mucous membrane of the bowels, are referable

to this cause; and may not many cases of hypochondriacism be occasioned in the same manner?

6. And lastly, the effect, on the vital powers, of the sojourn of these concretions in the gall bladder, seems to have been, at all times, directly enervating. For many years, this influence was inconsiderable; but it finally led to great debility in the circulation, with an atrophy which extended to the heart, as well as to other organs.

Cincinnati, Sept., 1831.

REVIEWS

AND BIBLIOGRAPHICAL NOTICES.

Art. V.—*Elements of Physics, or Natural Philosophy, General and Medical, explained independently of Technical Mathematics; and containing new disquisitions and practical suggestions.* By Neil Arnott, M. D., of the Royal College of Physicians.—First American, from the third London edition, with additions. By Isaac Hays, A. M., M. D., &c.—Philadelphia: Carey, Lea & Carey.—pp. 532.

Many reviews are written about every thing else, than the work, of which, they professedly treat. This is going too far on one side—we mean, however, to incline to the other; and if, in this notice of one of the most elegant productions of medical science, we confine ourselves, exclusively, to the work before us, our vanity leads us to hope our readers will not think that it arises from a paucity of interesting matter of our own, but from a sincere desire to call the attention of the profession to an important practical treatise.

No enlightened physician can look at the numerous classes of students which throng the halls of the various medical schools, without lamenting the great deficiency of elementary education which they exhibit. Not only are they, in general, found wanting in classical erudition, but even in the ordinary branches of school learning. How can a young man enter on the study of the most sublime of all sciences, with prospect of success, when he is absolutely ignorant of the first principles of natural philosophy, which, in the words of Lord Bacon, is *the foundation of all knowledge.*

Our medical schools too, are all defective in not appropriating a portion of the student's time to such studies. The fault lies here—Our seminaries of medical instruction are modelled

after the European, in most of which, particularly the continental, the student must be a graduate in the arts before he can be suffered to matriculate as a student of medicine. We, however, take *all* in. Under these circumstances, we have long been of opinion, that a professorship of physics, or natural philosophy, ought to be attached to every regular medical school.

It is a lamentable fact that many of our respectable medical men are very imperfectly acquainted with the grand principles of natural philosophy. The application, of these great fundamental truths, to medical science, which are continually made in the various text books and other elementary works, can be but very imperfectly understood, and many theoretical and practical errors are the consequence.

The work before us is a plain treatise, calculated particularly for the medical student and practitioner. The views of the author are so fully expressed in his introduction, that we cannot do better, than to let him speak for himself:

"The author was originally led to this undertaking, with the view of supplying the desideratum in medical literature, of a treatise on *Medical Physics*; but perceiving, as he proceeded, that the preliminary investigation of *General Physics*, required to suit the work to medical readers, would require to be nearly as extensive as if the work were for general readers, he determined to make it as complete and as extensively useful as possible. He has been encouraged, during his labor, by the belief, that the growing light of science which now exhibits more clearly the natural relations of the different departments of study, as attempted to be pourtrayed in the preceding pages, might enable him to avoid some of the defects of former elementary treatises, and to add some features of novelty and improvement to his own. He thought that an elementary treatise on Natural Philosophy should be characterized—by requiring in the reader no previous information, but a knowledge of the language in which it is written, and the commonest experience of the world; by having an arrangement of the subjects, as scientific or methodical as in a strictly mathematical treatise, yet without using a single term of technical mathematics; by the general principles being illustrated in all cases, by bringing before the reader, rather interesting natural phenomena, than artificial experiments and dry abstract reasonings; by containing nothing of so little interest as to be readily forgotten; by being calculated for general readers, and not for those of one profession or class; by embracing such an account of recent improvements, as to foster the spirit which leads to further study and advancement, &c.—

In composing the *general* chapters of the work, the author, as far as his ability and leisure would permit, has been guided by these considerations. The sections on *Animal Physics* were, of course, written for medical men; and a great service will be rendered by the work, if it only awakens them to a just sense of the importance of Physics, as one of the foundations of their art. But, even for general readers, there are few parts of these sections which the author would exclude. There is nothing more admirable in nature than the structure and functions of the human body, and there are many reasons why no liberal mind should be careless of the study. The details here are not more anatomical, than the illustrations from the animal economy contained in the common treatises of *Natural Theology*.—From the attempt in this work, to compress into the smallest possible space the greatest possible sum of scientific information, few historical details have been admitted, whether relating to the distinguished men who have benefitted the world as authors or inventors, or to the history of the progress of science: such details form an interesting, but distinct branch of study. With the concluding part of the work a list will be given of the best authors who have treated on the various subjects.

The author must not conclude without observing, that no treatise on Natural Philosophy can save, to a person desiring full information on the subject, the necessity of attendance on experimental lectures or demonstrations. Things that are seen, and felt, and heard, that is, which operate on the external senses, leave on the memory much stronger, and more correct impressions, than where the conceptions are produced merely by verbal description, however vivid. And no man has ever been remarkable for his knowledge of Physics, Chemistry, or Physiology, who has not had *practical familiarity* with the objects. With reference to this familiarity, persons who take a philanthropic interest in the affairs of the world, must observe with much pleasure, the now daily increasing facilities of acquiring useful knowledge, afforded by the scientific institutions formed and forming, not only through this kingdom, but through most civilized nations.

Those of the readers of this work who know the manner of a medical man's life, will not be disappointed if they miss here the minute accuracy and polish found in the productions of more leisurely writers; but amidst the interruptions and anxieties inseparable from the author's employments, he hopes, that any defects which exist are not mixed with considerable errors. He would feel greater solicitude, as to the reception of this work, if he did not know that the subjects embraced in it are so exceedingly interesting in themselves, that when treated with ordinary clearness and precision, they never fail to please."

1*st March*, 1827.

This work, decidedly the best which has appeared for the purposes of the medical student, soon attained great popularity

in Europe. It is, as yet, incomplete. The volume before us embraces three parts of the general plan—an additional volume has been published, and we anticipate the speedy fulfilment of the author's promise to bring the work to entire completion.

The first volume is said to contain "additions, by Isaac Hays, A. M., M. D., &c." Additions they certainly are; but, in our opinion, they are not only of a very useless, but of an injurious character. We allude particularly to the appendix in which the AMERICAN EDITOR attempts to make a great display of the very thing which it is the great object of the *author* to avoid—I mean technical mathematics. The few notes that are scattered through the book, by the same hand, are feeble to the last degree. Long as the lash of criticism has been applied to our physicians, for the contemptible meanness of insinuating their names into the printed title page of an American reprint, by the booksellers suffering them to add half a dozen two-penny notes, they are still so fond of good company, that they will run all risks to get into it. Leaving, then, the *notes* and the appendix out of the question, we will turn seriously to examine the contents of the work.

At the outset, indeed in the introduction itself, Dr. Arnott expresses his views of education, particularly in relation to large portions of time, which, at all the schools and colleges, is misspent over the classics, and abstract mathematics. The doctor entertains, very nearly, the same views as our celebrated countryman, Dr. Rush. Like him, however, he does not abjure the classics, but solemnly deprecates their abuse. We are pleased to find that these views are becoming more extensive in our happy land, and that professors in colleges, and schoolmasters, are now endeavoring to direct education to its only legitimate object—the preparation of the student for the business of life.

"The notions on education prevalent in the world until recently, have been as erroneous with respect to the comparative importance of different branches of knowledge, as with respect to the order of study. Thus at many of our famed schools, and even universities, the attention has been directed almost solely either to *Languages* and *Logic*, or to *Abstract Mathematics*; the preceptors seeming to forget that these objects have no value but in their application to *Physics*, *Chemistry*,

Life, and *Mind*. The reason for bestowing much attention on the Greek and Roman languages was good some centuries ago, because then no book of value existed which was not written in one of these languages; but now the case is completely reversed, for he who learns almost any matter of science from old books, is learning error, or at the least, knowledge far short of modern erudition. As to the higher mathematics, again, while they merit great honor, as being the instrument by which many useful discoveries have been made, and the conjectures of powerful minds have been confirmed, still a very deep investigation of them is neither possible to the generality of men, nor if it were so, would it be of any utility. The mode of proceeding to which we have now alluded, is just as if a man, to whom permission were given to enter and possess a magnificent garden, on condition of his procuring a key to open the gate, and measures of all kinds to estimate the riches contained within, should waste his whole life on the road, in polishing one key, or in procuring several of different materials and workmanship, and in preparing a multiplicity of unnecessary measures. This and many similar errors, arise from men not being in general taught to carry in their minds a clear conception of the general field of human knowledge, and thence of the comparative importance of the different subdivisions,—the possession of which conception is perhaps the most valuable single acquirement which the mind can make. He whose view is bounded by the limits of one or two small departments, will probably have very false ideas even of them, but he certainly will, of other parts, and of the whole; so as to be constantly exposed to commit errors hurtful to himself or to others. His mind compared to the well-ordered mind of a properly educated man, is what the crooked and misshapen body of the mechanic, confined to certain actions and attitudes, is to the godlike form of the most perfect specimen of human nature.

The whole work, which is of a strictly didactic character, exhibits occasional flashes of genius, tending to enliven the subject, and refresh the mind. It may, indeed, be pointed out as a model of scientific writing. The style is always pure, plain, and perspicuous. There is not a sentence in the whole of it, that you must read twice to comprehend. At the same time there is a dignity manifest, which assures you that you are perusing no ordinary production. There is, but too often, an awkwardness about the style of medical writings, which betrays, not only an ignorance of the ordinary rules of composition, but even a want of that facility of expression which can be acquired by habit alone. Look, for instance, at John Hunter's writings. When Hercules was set by his mistress to spin, he did not execute his task more clumsily. There you see a mighty mind at

work, laboring to bring out important ideas. But, in the "Elements of Physics," all is grace and beauty. If Dr. Arnott does not exhibit himself, with the shaggy lion's skin and knotted club of Hercules, he carries the full quiver and the silver bow of Apollo.

Our readers will not need an apology for the insertion of the following impressive and eloquent extracts:

"Physics is an important foundation of the healing art. The medical man, indeed, is the engineer pre-eminently; for it is in the animal body that true perfection and the greatest variety of mechanism are found. Where is there, to illustrate *Mechanics*, a system of levers and hinges, and moving parts, like the limbs of an animal body; where such an *hydraulic* apparatus, as in the heart and blood vessels; such a *pneumatic* apparatus, as in the breathing chest; such *acoustic* instruments as in the ear and larynx; such an optical instrument as in the eye; in a word, such mechanical variety and perfection, as in the whole of the visible anatomy! All these structures the medical man, of course, should understand, as a watchmaker knows the parts of the machine about which he is employed. The latter, unless he can discover where a pin is loose, or a wheel injured, or a particle of dust adhering, or oil wanting, &c., would ill succeed in repairing an injury; and so also of the ignorant medical man, in respect to the human body. Yet will it be believed, that there are medical men who neither understand mechanics, nor hydraulics, nor pneumatics, nor optics, nor acoustics, beyond the merest routine; and that systems of medical education are put forth at this day which do not even mention the department of *Physics!*—That such is the case, furnishes illustration of what is stated in the beginning of this essay; that the sciences and arts are progressive, and that perfect methods of education must arise gradually like all other things of human contrivance. It is within the recollection of persons now living, that political economy has been discovered to be a grand foundation of the art of government, indicating means of security against many national misfortunes common in former times; yea, against even famine and war. And the day is not distant, when the members of the medical profession generally, will understand how much the correct knowledge of animal structure, and function, and many remedies, must depend on precise acquaintance of Physics.

Besides the strictly professional matters contained in the medical sections of the present work, there are many others scattered through it which must interest the medical man; such are the subjects of *meteorology*, *climate*, *ventilation* and *warming* of dwellings, *specific gravities*, &c. But, indeed, what part of Natural Philosophy is not interesting to a medical man, since the whole is becoming every day more and more a part of a liberal education? In our cities now, and even in an ordinary dwelling house, a man is surrounded by prodigies of mechanic art; and with his proud reason, is he to use these, as careless of

how they are produced, as a horse is careless of how the corn falls into his manger? A general diffusion of knowledge is changing the condition of man, and elevating the human character in all ranks of society. Our remote forefathers were generally divided into small states or societies, having few relations of amity with surrounding tribes, and their thoughts and interests were confined very much within their own little territories and rude habits. In succeeding ages, their descendants found themselves belonging to larger communities, as when the English heptarchy was united; but still remote kingdoms and quarters of the world were of no interest to them, and were often totally unknown. Now, however, every one sees himself a member of one vast civilized society, which covers the face of the earth; and no part of the earth is indifferent to him. In England, a man of small fortune may cast his looks around him, and say with truth and exultation, 'I am lodged in a house that affords me conveniences and comforts, which even a king could not command some centuries ago. Ships are crossing the seas in every direction, to bring me what is useful to me from all parts of the earth. In China, men are gathering the tea-leaf for me; in America they are planting cotton for me; in the West India islands, they are preparing my sugar and my coffee; in Italy, they are feeding silkworms for me; in Saxony, they are shearing the sheep to make me clothing; at home, powerful steam engines are spinning and weaving for me, and making cutlery for me, and pumping the mines, that minerals useful to me, may be procured. Although my patrimony was small, I have post coaches running day and night, on all the roads, to carry my correspondence; I have roads, and canals, and bridges, to bear the coal for my winter fire: nay, I have protecting fleets and armies around my happy country, to secure my enjoyments and repose. Then I have editors and printers, who daily send me an account of what is going on throughout the world, among all these people who serve me. And in a corner of my house, I have Books! the miracle of all my possessions, more wonderful than the wishing cap of the Arabian tales; for they transport me instantly, not only to all places, but to all times. By my books I can conjure up before me, to vivid existence, all the great and good men of antiquity; and for my individual satisfaction. I can make them act over again the most renowned of their exploits: the orators declaim for me: the historians recite: the poets sing: and from the equator to the pole, or from the beginning of time until now, by my books, I can be where I please.'—This picture is not overcharged, and might be much extended; such being God's goodness and providence, that each individual of the civilized millions that cover the earth, may have nearly the same enjoyments as if he were the single lord of all."

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"But the enlightened Christian minister earnestly recommends the study of nature; first, because from contemplating the beauty of creation, discovered by general science, with the wisdom and benevolent design manifest in all its parts, there spring up in every undepraved

mind, those feelings of delight and gratitude, which constitute the adoration of natural religion, and which form, as shown by many admirable writers on Natural Theology, a fit foundation for the sublime doctrine of immortality: and secondly, because a Revelation must be proved by the miracles which accompanied its establishment; and to enable men to distinguish between miracles and the usual course of nature, a perfect knowledge of that course, or of Natural Philosophy, is essential. All the false religions of antiquity were founded on, and upheld by pretended miracles. As regards the question of immortality, even independently of Revelation, no man who contemplates the order and beauty of the material world, and who sees the hideous deformities of the moral world—where vice so often triumphs, and modest virtue pines and dies—can for a moment believe them to be the work of the same author, unless there be an hereafter or retribution; and, feeling that eternal justice requires another state for man, he embraces with delight, the cheering promises of Christianity. There have been, however, at various times, even among Christians, sincere, but weak or ill-informed men, who decried the study of the natural sciences, as inimical to true religion—as if God's ever visible and magnificent revelation of his attributes in the structure of the universe could be at variance with any other revelation!—But such prejudices are quickly passing away. Where considerable knowledge of nature exists, debasing and gloomy superstition must cease. It is not the abject terror of a slave which is inspired by contemplating the majesty and power of our God, as displayed in his works, but a sentiment akin to the tender regard which leads a favored child to approach, with confidence, a wise and indulgent parent."

The first part of the work is devoted to the examination and explanation of the great fundamental truths of physics—particularly the nature and constitutions of the material masses which compose the universe, and the motions or phenomena which are continually going on among them.

Each section is preceded by a short summary of its contents, which is very properly called an *analysis*. This analysis, in detached portions, serves the author for a text, for each particular branch of his subject, and, as it contains, in a few words, the substance of the section, he wishes to impress it forcibly on the mind of the reader. A portion of the analysis is printed between inverted commas, at the commencement of each subject; and it is particularly requested that the student reperuse the analysis at the several interruptions, that he may have constantly before him that clear view of the general relations, among the different parts of the subject, which is essential to a perfect understanding of it.

In a review of such a treatise, it is utterly impossible that we should succeed in giving any thing like a sketch of the whole design. All we can do is to walk through the varied extent of subjects; and, here and there, stop to point out a prospect of unusual interest and beauty.

Preceded, as the animal part of the work is, by considerations of a philosophical character, it forms decidedly the best possible work on physics, to place in the hands of a medical student. No preceptor ought to suffer a student to enter on the immediate purposes of medical instruction without a sedulous and laborious perusal of this work—a work which, in our opinion, ought to receive an annual perusal from every student and every practitioner of medicine. It ought to be found on the shelves of all our country practitioners, as a book of reference. Many of our most distinguished and successful physicians of the western states are self-made men—of powerful intellect and of inventive genius. These men are mostly unacquainted with the general doctrines of physics. A work that, like this, will bring philosophy to their homes and fireplaces, is the very thing for them. It will illuminate their path, and render their assiduous labors tenfold more productive.

Nor is it to this class alone that such a work is important.—The most learned man cannot rise from the perusal of such a book, without finding himself more learned.

Dr. Arnott's is, in truth, a book suited to the character and wants of the nineteenth century. It is a plain, practical treatise, that will live and be respected, when all the visionary speculations of the theorists will have vanished, with the memory of their projectors, into "thin air." The illustrations of the grand principles of nature are drawn from the more familiar sources. We take at random his exemplifications of capillary attraction:

> *Attraction* is called *capillary* when it acts between a liquid and a solid, which is tubular or porous.
>
> When an open glass tube is partially immersed in water, the water within it stands above the level of that on the outside, and the difference of level is greater as the tube is less, because, in small tubes,

the glass all round being nearer to the raised water, attracts it more powerfully.

Between two plates of glass standing near to each other, the same rising of water will occur; and if they are closer at one perpendicular edge than at the other, the surface of the suspended water will be higher there.

A piece of sponge or a lump of sugar, touching water by its lowest corner, soon becomes moistened throughout.

The wick of a lamp lifts the oil to supply the flame, from two to three inches below it.

A mass of cotton thread hanging over the edge of a glass of water will empty it, as a syphon would. A towel will empty a basin of water in the same way.

Dry wedges of wood driven into a circular groove, formed round a pillar of stone, on being moistened, will swell so as to rive off the portion from the block. Millstones are thus cut from the rock, in some quarries of Germany.

An immense weight or mass may be raised a little way, by first tightening a dry rope between it and a support, and then wetting the rope:—the moisture imbibed into the substance of the rope by capillary attraction causes it to become shorter.

At one time the small vessels of vegetables were supposed to raise the sap from the roots, by capillary attraction, but this is known now to be chiefly an action of vegetable life.

See also his account of dilatation by heat:

Dilatation.—A rod of iron, which, when cold, will pass through a certain opening, and will lie lengthwise between two fixed points, when heated, becomes too thick and too long to do either.

For accurate mensuration, therefore, rods or chains used as the measure, must either be at a given temperature, or due allowance must be made for the difference.

The wall of a building had begun to bulge out so as to threaten its stability. No force tried was sufficient to return it to perpendicularity, until the idea occurred of using the contracting force of iron, while cooling. The wall was connected with the opposite wall by a number of iron bars, passing through both, and having nuts screwed upon their projecting ends, which bars were then heated, one half at a time, by lamps placed under them, and while lengthened in consequence, and projecting beyond the wall, the nuts were screwed close up to the wall, so that on again cooling, and contracting, they pulled the wall back to its place.

The iron rim of a coach-wheel, when heated, goes on loosely and easily, and when afterwards cooled, it binds the wheel most tightly, giving remarkable firmness and strength.

Iron hoops on masts, and on casks, are made to bind in a similar manner.

The common thermometer, for measuring degrees of heat, is a glass bulb, filled with mercury or other fluid, and having a narrow tube

rising from it, into which the fluid ascends on being expanded by heat, and so marks the degree.

A flaccid bladder of cold air, on being heated, becomes tense, and in certain cases, will burst."

We can hardly suppose Dr. Arnott ignorant of the name of the building that was thus saved by the application of this beautiful law of nature. Still less do we suspect that private or national pique would lead him to conceal that it was the Conservatory of Arts, in Paris; a building which is endeared to every lover of science, by the valuable collection of models it enshrines. It is indeed the great treasure house of the arts.

"Hic arma—hic currus."—*Virgil.*

Again:

"*Hardness*" is not proportioned, as might be expected, to the density of the different bodies, but to the polarity of the atoms in them, that is, to the force with which the atoms hold their places in some particular arrangement.

"Hardness is measured generally by the circumstance of one body being capable of scratching another.—It is worthy of notice, however, that the powder or dust of a softer body will often aid in wearing down or polishing one that is harder.

Gold, though soft, is four times heavier than the hard diamond; and mercury, which is fluid, is nearly twice as dense as the hardest steel.

Diamond is the hardest of known substances. It cuts or scratches every other body, and is generally polished by means of its own dust.

Glass-cutters use a point of diamond as a glass-knife, dividing and shaping their panes.

Common flint also cuts glass, as is seen in the common scribblings on windows.

It is remarkable, that the preparation of iron, called steel, may either be soft like pure iron, or by being heated and suddenly cooled, in the process called tempering, may become nearly as hard as diamond. The discovery of this fact is, perhaps, second in importance, to few discoveries which man has made; for it has given him all the edge-tools and cutting instruments, by which he now moulds every other substance to his wishes. A savage will work for twelve months, with fire and sharp stones, to fell a great tree, and to give it the shape of a canoe; when a modern carpenter, with his tools, could accomplish the work in a day or two.

The project has lately been realized of making engravings on plates of soft steel, instead of copper, and afterwards tempering the steel to such hardness, that it may be used as a type, or die, to make its im-

pression, not on paper, but on other plates of soft steel, or of copper, each of which is then equal in value to an original and distinct engraving; by this means the beautiful productions of art, instead of being limited to a comparatively small number of copies and persons, may be multiplied almost to infinity, becoming the chief delight of all."

As Dr. Arnott disclaims all historical detail, we could forgive his omitting to place on the brows of our countryman, Perkins, the chaplet of praise for transferring engravings from steel to copper or soft steel, were it not that, in another part of his work, he has travelled a little out of the record, to give this ingenious philosopher a rap on the knuckles for a failure. There is a decided tinge of illiberality; such, too, as we did not expect from Dr. A., in the concluding sentence:

"From misapprehension of the law of increase of force, by increase of heat, in water, explained by the table at page 329, some exceedingly false conclusions have been drawn, and acted upon at great expense—as lately by Mr. Perkins, in attempts to make engines to work with an excessively high pressure. Besides making the error now alluded to, and others, Mr. Perkins also neglected the fact, that we possess no material for cylinders and pistons strong enough to bear the contemplated pressure and friction even for a moderate time. Perhaps better proof could not be adduced of the absurdities into which even highly ingenious men may fall when ignorant of those general truths of nature on which all branches of art are founded, than the history of supposed inventions and improvements connected with the steam-engine."

We would simply state, that we happened to be in London at the very time that Perkins was making his experiments, and that we happened to know that Dr. Henry, of Manchester, and Sir Humphrey Davy both thought well of Mr. P.'s project. We also know that, as to the cylinders and pistons, the invention of the steel collars and hollow cylindric copper pistons, made by Mr. Perkins, so much surprised Bramah, that he thought his hydrostatic press would be thereby rendered many hundred times more powerful. It would be well for science, had Dr. Arnott less of the *insular* feeling.

In mentioning tenacity, our author remarks:

"Certain animal substances have great tenacity: as—the silk-worm's thread, which is our strongest connecting or sewing material,

and has such flexibility united with its strength—the ligaments and tendons of the animal body, possessing, at once, such admirable strength, elasticity, and pliancy: these, when dried, and otherwise prepared, constituted the bow-strings of our remote forefathers—the hair or wool of animals, twisted into threads, and worked into the strong and beautiful textures of the loom—strips of animal intestine, prepared and twisted, forming the cords of harp and violin, and in strength and uniformity, rivalling the steel wires of keyed instruments.

The gradual discovery of substances possessed of strong tenacity, and which man could yet easily mould and apply to his purposes, has been of great importance to his progress in the arts of life. The place of the hempen cordage of European navies is still held in China by twisted canes and strips of bamboo; and even the hempen cable of Europe, so great an improvement on former usage, is now rapidly giving way to the more complete and commodious security of the iron chain—of which the material to our remote ancestors existed only as useless stone or earth.—And what a magnificent spectacle is it, at the present day, to behold chains of tenacious iron, stretched high across a channel of the ocean, as at the Menai Strait between Anglesea and England, and supporting an admirable bridge-road of safety, along which crowded processions may pour, regardless of the deep below, or of the storm; while ships there, with sails full-spread, pursue their course, unmolesting and unmolested!"

Look at the felicitous illustrations he presents on the subject of the inertia of bodies:

"When the sails of a ship are first spread to receive the force or impulse of the wind, the vessel does not acquire her velocity at once, but slowly, as the continuing force gradually overcomes the inertia of her mass. If the sails are afterwards suddenly taken in, she does not loose her motion at once, but slowly again, as the continued resisting force of the water destroys it.

Horses must make a greater effort at first to put a carriage in motion, than to maintain the motion afterwards. And a strong effort is required to stop a moving carriage.

When a carriage hanging from springs first begins to move, the body of it appears to fall back, and a person within, seems to be suddenly thrown against the back cushion. When the carriage stops again, the body swings forward, and if the stoppage be very sudden, a careless passenger may find his head pressing through a front glass. These particulars prove the inertia, first of rest, and secondly of motion.

A man standing carelessly at the stern of a boat, when the boat begins to move, falls into the water behind; because his feet are pulled forward while the inertia of his body keeps it where it was, and therefore without its support. The stopping of a boat, again, illustrates the opposite inertia of motion, by the man's falling forward.

A bad rider on horseback may be left behind, when his horse darts off suddenly; or may be thrown off on one side by the horse starting to the other. A horse at speed, stopping suddenly, often sends his cavalier over his ears;—as was mortifyingly experienced by a coxcomb, who chose to canter along a footpath, to the annoyance of the company, and whose horse, on hearing the word *halt*, loudly addressed to it by a waggish spectator, who knew its military history, suddenly stood, and got rid of its load. The will of the beau had sinned grossly against the law of propriety, but his body very perfectly obeyed the laws of inertia and gravity, by shooting forward in its parabolic curve to the earth.

A young and not yet skilful Jehu having run his phæton against a heavy carriage on the road, foolishly and dishonestly excused his awkwardness, in a way which led to his father's prosecuting the old coachman for furious driving. The youth and his servant both deposed, that the shock of the carriage was so great, as to have thrown them over their horses' heads, and thus they lost their cause, by unwittingly proving, that the faulty velocity was their own.

A man jumping from a carriage at speed, is in great danger of falling, after his feet reach the ground; for his body has as much forward velocity, as if he had been running with the speed of the carriage; and unless he advance his feet as in running, to support his advancing body, he must as certainly be dashed to the ground, as a runner whose feet are suddenly arrested. A man racing, who receives a signal to stop, and a man jumping from a flying vehicle, must check their motion nearly in the same way.

A person wishing to leap over a ditch or chasm, makes a run first, that the motion thereby acquired may help him over. A standing leap falls much short of a running one.

An African traveller saw himself followed by a tiger, from which he could not escape by running; but perceiving that the animal was watching an opportunity to seize him by the usual spring or leap, he artfully led it to where the plain terminated in a precipice, hidden by brushwood, and he had just time to transfer his hat and cloak to a bush, and to retreat a few paces, when the tiger sprung upon the bush, and by the motal inertia of his body, was carried over the precipice, and destroyed.

From a glass of water suddenly pushed forward on a table, the water is spilt or left behind, but if the glass be already in motion, as when carried by a person walking, and if it then be suddenly stopped by coming against an impediment, the water is thrown or spilt forward.

A servant carrying a tray of glasses or china in the dark, and coming suddenly against an obstacle, hears all his freight slipping forward and crashing at his feet: and a too hurried departure with such a load causes equal destruction, on the opposite side.

The actions of beating a coat or carpet with a cane, to expel the dust; of shaking the snow from one's shoes, by kicking against the door-post; of knocking a dusty book against a table, or shutting it violently —all illustrate the same principle.

If a guinea be laid on a card, already resting on the point of the finger, a small fillip or blow to the edge of the card will cause it to dart off, but the guinea, by its inertia, will remain resting on the finger.

When we desire a person, with suspected disease of the brain, to shake his head, and tell whether and where he feels pain, we are doing nearly as if we touched the naked brain with the finger, to find the tender part; for the inertia of the brain, when the skull is moved, causes a momentary pressure between it and the skull, almost equivalent for our purpose to such a touch.

This kind of pressure is sufficient to break and destroy tender wares—as glass or eggs—in packages which are too suddenly moved or stopped.

A weight suspended by a string on shipboard, is seen vibrating up and down, as the ship pitches with the waves. It seems to fall as the ship rises, and to rise as the ship falls: but the motion is really in the ship, and the rest is in the weight. A heavy weight so supported, and connected with a pump-rod, would work the pump.

Like the weight last mentioned, the mercury of a common barometer on shipboard is seen rising and falling in the tube; and until the important improvement was lately made, of narrowing the tube in one place to prevent this, the barometer was useless at sea. The explanation is, that the tube rises and falls with the ship, from being connected with it; but the mercury, which plays freely in the tube, and is supported by the atmospheric pressure, tends, by its inertia, to remain at rest, and thus makes the motion of the ship apparent.

Like the mercury in the barometer tube on shipboard, the blood in the vessels of animals is similarly affected under similar circumstances. In a long vein below the heart, when the body falls, the blood, by its inertia and the supporting action of the vessels, does not fall so fast, and therefore really rises in the vein: and as there are valves in the veins preventing return, the circulation is thus quickened without any muscular exhaustion on the part of the individual. This helps to explain the effect of the movement of carriages, vessels at sea, swings, and of passive exercise generally, on the circulation, and leaves it less a mystery why these are often so useful in certain states of weak health.

If a cannon ball were to break to pieces in its flight, its parts would still advance with the previous velocity. Thus also, in the deadly contrivance of the Shrapnel shell, which is a case containing hundreds of musket bullets, these being set loose at the desired distance from the devoted body of men, retain the forward velocity of the shell, and spread death around like the discharge on the spot of a whole battalion of musketry.

On the awful occasion of a ship in rapid motion being suddenly arrested by a sunken rock, all things on board, men, guns, and furniture, start from their places, and dash forwards; and the inertia or mutual obstinacy of the stern parts of the ship, by pressing forward, crushes the bow against the rock.

A beautiful instance is presented, of the perfection of the mechanic arts in the construction of the chronometer.

"It would be exceeding the limit marked out for this general work, to speak more particularly here of those admirable watches which have been produced within the last thirty years, under the name of *chronometers*, for the purpose of ascertaining the longitude at sea; but the author may perhaps be excused for mentioning a moment of surprise and delight which he experienced, on first seeing their singular perfection experimentally proved. After months spent in a passage from South America to Asia, his pocket chronometer and others on board, announced one morning that a certain point of land was then bearing east from the ship at a distance of fifty miles; in an hour afterwards, when a mist had cleared away, the looker-out on the mast gave the joyous call of "Land ahead!" verifying the report of the chronometers almost to a mile, after a voyage of thousands. It is allowable at such a moment, with the dangers and uncertainties of ancient navigation before the mind, to exult in contemplating what man has now achieved. Had the rate of the wonderful little instrument, in all that time, been quickened or slackened ever so slightly, its announcement would have been worse than useless,—but in the night and in the day, in storm and in calm, in heat and in cold, its steady beat went on, keeping exact account of the rolling of the earth and of the stars; and in the midst of trackless waves which retain no mark, it was always ready to tell its magic tale of the very spot of the globe over which it had arrived."

After our author has made a remarkably simple and perspicuous display of the principles which regulate the centre of gravity, he gives us a development of the actions and postures of animals, particularly of man, calculated to illustrate these principles. His remarks on seasickness are truly interesting.

"A body, we have seen, is tottering in proportion as it has great altitude and narrow base—but it is the noble prerogative of man to be able to support his towering figure with great firmness, on a very narrow base, and under constant change of attitude. The faculty is acquired slowly, because of the difficulty. A child does well who walks at the end of ten or twelve months, while the young of quadrupeds, which have a broad supporting base, are able to stand, and even to move about almost immediately.

The supporting base of a man consists of the feet and the space between them. The advantage of turning out the toes is, that without taking much from the length of the base, it adds a good deal to the breadth.

If there be considerable art in walking on two perfect feet, there must be still more in walking on two slender wooden legs with rounded

extremities:—which we often see done, nevertheless, by mutilated soldiers and sailors.

All the ladies of the empire of China have to acquire nearly the same talent as these victims of war; for barbarous custom has crippled them, for confining their feet for life, in the shoes which fitted them in infancy.

But surpassing in difficulty any of these instances, is the practice of walking on stilts, which is general among the inhabitants of the sandy plains called *Les Landes*, in the south-west of France. These plains afford tolerable pasturage for sheep; but during one portion of the year they are half covered with water, and during the remainder they are still very unfit walking ground, by reason of their deep loose sand and thick furze. The natives combat the inconveniences of all the seasons, by doubling the length of their natural legs, through the addition to them of the stilts mentioned, which they call *des echasses*. These are wooden poles, put on and off as regularly as the other parts of their dress. The people, when raised upon them, appear to strangers a new and extraordinary race of long-legged beings, marching readily over the loose sand, or through the water, with steps of eight or ten feet in length, and with speed equalling that of a trotting horse; their moderate journeys being of thirty or forty miles in a day. The shepherds, while watching their flocks, post themselves in convenient stations, with a long staff to support them behind, and having a rough sheepskin cloak and cap to cover them above, like a thatched roof, they appear like little watch towers, or singular lofty tripods, scattered over the face of the country.

Still beyond the art of walking on stilts is that which some persons attain of walking and dancing on a single rope or wire; or even of keeping the centre of gravity above the base, while standing on the moveable support of a galloping horse. The rope dancer usually carries a long pole in his hand to balance him; it is loaded at each end, and when he inclines, he throws it a little towards the side required, that the reaction may restore his body to perpendicularity.

Much art of the same sort is shown in the attitudes and evolutions of the skater; in the amusements of supporting a stick upright on the end of the finger; and in many other feats of a like kind.

Attitudes generally depend on the necessity of keeping the centre of gravity of the body over the base under variety of circumstance.—The following are examples:—the straight or upright port of a man who carries a load on his head;—the leaning forward of one who carries it on his back;—the hanging backwards of one who bears it between his arms;—the leaning to one side of him who is carrying a weight on the other side;—the habitual carriage of very fat people, whose head and shoulders are thrown back, giving a certain air of self-satisfaction,—an air which belongs also to a state of pregnancy, and even to that of the dropsical patient, although producing in it so sad an incongruity.

When a man walks or runs, he inclines forward, that the centre of gravity may overhang the base: and he must then be constantly ad-

vancing his feet to prevent his falling. He makes his body incline just enough to produce the velocity which he desires.

A man, in pulling horizontally at a load, is merely causing his body to overhang its base, so that its tendency to fall may become a force or power applicable to the work.

When a man rises from a chair, he is seen first bending the body forward, so as to bring the centre of gravity over the feet or base, and then he lifts the body up. If he lift too soon, that is, before the body be sufficiently advanced, he falls back again.

A man standing with his heels close to a perpendicular wall, cannot bend forward sufficiently to pick up any object that lies on the ground near him, without himself falling forward; because the wall prevents him from throwing part of his body backward, to counterbalance the head and arms that must project forward. A man little versed in such matters, agreed to give ten guineas for permission to try to possess himself of a purse of twenty, thus laid before him; he of course lost his money.

When a man walks at a moderate rate, his centre of gravity comes alternately over the right and over the left foot. This is the reason why the body advances in a waving line, and why persons walking arm in arm shake each other, unless they make the movements of their feet to correspond, as soldiers do in marching.

Seasickness is a subject closely related to the present. Man requiring, as now explained, so strictly to maintain his perpendicularity, that is, to keep the centre of gravity always over the support of his body, ascertains the required position in various ways, but chiefly by the perpendicularity or known position of things about him. Vertigo, and sickness, are the consequences of depriving him of his standards of comparison, or of disturbing them.

Hence on shipboard, where the lines of the masts, windows, furniture, &c., are constantly changing, sickness, vertigo, and other affections of the same class, are common to persons unaccustomed to ships. Many experience similar effects in carriages, and in swings; or on looking from a lofty precipice, where known objects being distant, and viewed under a new aspect, are not so readily recognized; also in walking on a wall or roof; in looking directly up to a roof, or to the stars in the zenith, because then all standards disappear: on entering a round room, where there are no perpendicular lines of light and shade, as when the walls and roof are covered with a paper which has no regular arrangement of spot: on turning round, as in waltzing, or if placed on a wheel; because the eye is not then allowed to rest long enough on any standard, &c.

All people in the dark, and therefore blind people always, use standards belonging to the sense of touch; and it is because, on board of ship, the standards both of sight and of touch are lost, that the effect is so very remarkable.

But seasickness also partly depends on the irregular pressure of the bowels among themselves and against the containing parts, when their inertia or downward pressure varies with the rising and falling of the ship.

From the nature of seasickness, as discovered in these facts, it is seen why persons unaccustomed to the motion of a ship, often find relief by keeping their eyes directed to the fixed shore, where it is visible: or by lying down on their backs and shutting their eyes; or by taking such a dose of exhilarating drink as shall diminish their sensibility to all objects of external sense."

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"*Beauty of attitude* and *grace of carriage* in the human individual, are in great part referable to this principle.

The postures of opera dancers might pass as intentional illustrations of the number of ways in which the centre of gravity may be kept above a narrow base, by counteracting one disturbing motion or extension of a limb by some opposite and corresponding motion. The common statue of the god Mercury on tiptoe is a permanent familiar illustration of a beautifully balanced attitude.

Grace of carriage includes not only a perfect freedom of motion, but also a firmness of step, or steady bearing of the centre of gravity over the base. It is usually possessed by those who live in the country, and according to nature, as it is called, taking much and varied exercise. What a contrast is there between the gait of the active mountaineer, rejoicing in the consciousness of perfect nature, and that of the mechanic or shopkeeper, whose confinement to the cell of his trade, soon produces in his body a shape and air that correspond to it;—and in the softer sex what a contrast is there, between the fair one who recalls to us the fabled Diana of old, and that other, who having scarcely trodden but on smooth pavements or carpets, under any new circumstances, carries her person as if it were a load altogether new and foreign to her."

Having given the laws of mechanics, Dr. Arnott proceeds to apply them to the mechanism of the human skeleton. Such applications are very frequently to be met with, in works on anatomy and physiology; but, not in the style in which they are here given. There is a raciness in Dr. A.'s matter and manner, that keeps the appetite whetted. For even on the most trite subjects, one feels as little inclined to close his book, as does a boarding-school miss to fall asleep over a new novel. Our limits will not permit us to give samples of this part. In our January number, we presented a review of Mr. Duffin's little work on deformity of the spine. The following extract on the same subject, from our author, will form a supplement of a very useful character. Premising a series of observations on the elasticity, flexibility, and strength of the spinal column, he presents the following considerations:

"To the well-being of the higher classes of animals, exercise of their various parts is as necessary as their nourishment, and if it be withheld by any cause during the period of growth, the body is often permanently crippled, or at least, never acquires its due form and proportions. The overflow of life and energy which nature has given to young creatures, to prompt them to the required exertion, is seen in the ever-changing occupation of a child, the quick succession of its ideas, its jumping and skipping, and using all the modes of round-about action that will expend muscular energy, instead of seeking, as in after life, to accomplish its desired ends in the shortest ways:—and among the inferior animals, the same truth is illustrated by the play of kittens, puppies, lambs, &c. But, strongly as nature has thus expressed herself upon the important subject of exercise among the young, tyrant fashion, with a usual perversion of common sense, has of late times, in England, formed a school of discipline, for young women of the higher classes, which wars directly with nature's dictate. The consequences have been such, that a stranger arriving here from China, might almost suppose it the design to make crooked and weak spines by our school discipline, as it is the design in China to make little feet by the iron shoe. The result is the more striking, because the brothers of the female victims, and who of course have similar constitutions, are robust, healthy, and well formed. A *peasant girl*, when her spirits are buoyant, is allowed to obey her natural feeling, and at proper times may dance, and skip, and run, until healthy exhaustion asks that repose, which is equally allowed; and thus she grows up strong and straight: but the *young lady* is receiving constant admonition to curb all propensity to such vulgar activity, and often, just in proportion as she subdues nature, she receives the praise of being *well bred*. The multifarious studies of the young lady come powerfully in aid of the admonition, by fixing her for many hours every day to sedentary employment. The consequences soon follow, of weakness in the body generally from the want of the natural quantity and variety of exercise, but of the back particularly, from the manner in which the sitting is usually performed. While it would be accounted great cruelty to make a delicate young creature stand all day, because the legs would tire, this very cruelty is in almost constant operation against the back, as if backs could not tire as well as legs. A girl is allowed to sit down because she has been long standing, but great care is taken that the muscles of the back, which still remain in action as she sits, shall not be at all relieved; for, from the idea that it is ungraceful to loll, she is either put upon a stool which has no back at all, or upon a very narrow chair with a perpendicular back. Now neither of these relieves her spine, yet the stool is less hurtful than the chair, by allowing it to bend in different ways, so as to rest the different sets of muscles alternately, while the chair keeps it constantly upright, and nearly unmoved. The excessive fatigue soon causes the spine to give way in some part, and to bend, and the curvature becomes permanent. When a bend has taken place in one situation, there immediately follows an opposite bend above or

below, to keep the centre of gravity of the body always directly over the base. Thus the curve becomes double, like an italic *f*, and the distortion is complete. In bending, the spine is sometimes also partially rotated, so as to show from behind that waving profile which should be seen only from the side.

In the school discipline now spoken of, when the inclination of the back has once begun, it is very soon increased by the means used to cure it. Strong, stiff stays, are put on, to support the back as it is said, but which in reality, by superseding the action of the muscles intended by nature as the supports, cause these to loose their strength, so that when the stays are withdrawn, they are unable to support the body. Longer sittings in the narrow upright chair are then recommended, and sometimes the back is forcibly stretched by pulleys, or the patient is kept all day and night lying on an inclined board, losing her health, &c. &c. The only things guarded against are the allowing to the child proper exercise and air, and the letting her rest when she is not taking exercise. With many persons the prejudice had at least grown up, that strong stays should be put on at a very early age, to prevent the first approach of the mischief, and that a child should always be made to sit on the straight-backed chair or to lie on the hard plane: and it is probable, that if these cures and preventives had been adopted as universally and strictly as many deemed them necessary, we should now scarcely have in England a young lady with a back strong enough properly to perform its offices. It would be disgusting to see an attempt made to improve the strength and shape of a young race horse or greyhound, by binding tight splints or stays round its beautiful young body, and then tying it up in a stall; but this is the kind of absurdity and cruelty which has been so commonly practiced in this country, towards what may well be called the most faultless of created beings."

The mechanism of the heel deserves our notice. The facts here enumerated deserve the attention of parents, as bearing immediately on that much neglected part of parental duty—the physical education of children. How many a beautiful foot is spoiled, how many an awkward gait contracted, by the palpable neglect of parents! The good doctor seems to speak with a feeling of enthusiasm, of the Parisian ladies' legs, slightly tinged, however, with sectional dislike of their city.

"*The heel*, by projecting so far backwards, is a lever for the strong muscles to act by, which form the calf of the leg, and terminate in the tendo achillis. These muscles, by drawing at it, lift the body, in the actions of standing on the toes, walking, dancing, &c. In the foot of the negro, the heel is so long as to be ugly in European estimation; and its great length rendering the effort of smaller muscles

sufficient for the various purposes, the calf of the leg in the negro is smaller in proportion than in other races of men.

In a graceful human step, the heel is always raised before the foot is lifted from the ground, as if the foot were part of a wheel rolling forward; and the weight of the body supported by the muscles of the calf of the leg, as just described, rests for the time on the forepart of the foot and toes. There is then a bending of the foot in a certain degree. But where strong wooden shoes are used, or any shoe so stiff that it will not yield and allow this bending of the foot, the heel is not raised at all until the whole foot rises with it, so that the muscles of the calf are scarcely used, and in consequence soon dwindle in size, and almost disappear. Many of the English farm servants wear heavy stiff shoes; and in London it is a striking thing to see the drivers of country wagons, with fine robust persons in the upper part, but with legs which are fleshless spindles, producing a gait most awkward and unmanly. The brothers of these men, and who are otherwise employed, are not so misshapen. What a pity that, for the sake of a trifling saving, fair nature should be thus deformed. An example of an opposite kind is seen in Paris. There, as the streets have no side pavements, and the ladies have consequently to walk almost constantly on tiptoe, the great actions of the muscles of the calf has given a conformation of the leg and foot, to match which the Parisian belles proudly challenge all the world, not aware probably, that it is a defect in their city to which the peculiarity of their form is in part owing."

A single extract on the subject of dislocations:

"In the treatment of dislocations and fractures of the frame-work of the human body, the surgeon cannot avoid displaying strikingly, either his skill in his profession, or his ignorance. With what ease does the displaced arm or thigh-bone return, under the guidance of the skilful hand! and to what horrible and unavailing torture is the victim subjected, when in such a case ignorance dares the attempt!—It is positive pain to a vivid imagination to look into the records of ancient surgery, and to be made present, as it were, to the stretching of patients on the rack with pullies and powerful engines, to do what better information could so easily have accomplished without violence. And would that the records of modern times contained fewer instances of individuals crippled for life by such practice. Nothing can now ensure impunity and a quiet conscience to a practitioner in this branch, if he wants a familiarity with the laws of mechanical philosophy, and a perfect knowledge of anatomy.

With our present information on these subjects, we are surprised at the details of the practices and errors promulgated in former times, owing to ignorance of mechanics, even by authors of the highest credit. It would hardly be believed that Mr. Pott, one of the glories of English surgery, held, that in reducing a dislocation of the shoulder or hip, it was useless to pull by the hand or foot, because the intervening joints prevented the strain from reaching the part desired.

Some surgeons, possessing a certain degree of knowledge in mechanics, but only that degree which is dangerous, having heard that the lever was a powerful engine, have tried to replace bones solely by leverage, as it was called. Thus, a man's dislocated arm has been placed over the back of a chair as a fulcrum, or over the top of a door, and while the weight of the suffering body was hanging to it on one side as the resistance, force has been applied to the other side, enough sometimes to break the bone, or to tear away the ligaments and soft parts about the joint.

Other surgeons, after learning in the same way the effects of the pulley, having wished to do all by irresistible extension, and instead of borrowing the moderate assistance which might be useful, have torn muscles and ligaments from their attachments."

(*To be Continued.*)

ART. VI.—*Select Medico-Chirurgical Transactions; or a Collection of the Most Valuable Memoirs read to the Medico-Chirurgical Societies of London and Edinburgh; the Association of Fellows and Licentiates of the King and Queen's College of Physicians in Ireland; the Royal Academy of Medicine of Paris; the Royal Societies of London and Edinburgh; the Royal Academy of Turin; the Medical and Anatomical Societies of Paris, &c. &c. &c.* —Edited by ISAAC HAYS, M. D.—Philadelphia: E. L. Carey and A. Hart.—pp. 420.

The volume which has been offered to the American public, under this title, is the first of a series of volumes contemplated to be published by the enterprising gentlemen whose names appear on the title page.

In this country, the physicians of every grade select the medical journals as the medium of offering their communications to the public. In Europe, the case is different. The transactions of learned societies, occupy a much higher rank, and are therefore generally selected by those whose talents or reputation can procure for their writing an insertion. The expensive character of these publications, places them beyond the reach of the profession in this country; and they are hence indebted for the information they convey, to the occasional

and imperfect analyses of them, which appear in the medical journals.

This publication is an effort to supply this defect, to a certain extent, by giving a selection of the most valuable of the papers, read before the different learned societies of Europe.

The first article in this collection, is a paper by W. Lawrence, Surgeon to St. Bartholomew's Hospital, read before the Medico-Chirurgical Society of London—*Observations on the Nature and Treatment of Erysipelas, illustrated by cases.*

By Erysipelas, the author understands inflammation of the skin, either alone or in conjunction with that of the subjacent adipose and cellular tissue. Like other inflammations, it varies in extent, and its degrees are described under the familiar names of erythema, erysipelas, and phlegmonous erysipelas. The first, a simple eruption of the skin; the second, a more violent inflammation extending into the cellular membrane, and producing effusion and vesication; the last, involving both the cellular and adipose membrane, and causing suppuration and mortification of the former.

His description of simple erysipelas we shall pass over, except the following description of the appearances after death:

"In simple erysipelas the red colour disappears as soon as the circulation stops. The cuticle, if not already separated by vesication, soon loses its adhesion to the cutis, and the surface of the latter, in an advanced stage of the affection, has a livid appearance. The texture of the skin presenting a reddish or brownish tint, is loaded with serum, and softer than in the natural state. Serous effusion is found in the cellular tissue; and its vessels, as well as those of the skin, are distended. Sometimes we unexpectedly discover suppuration where the case has appeared during life, to be simple erysipelas, and no symptoms indicating formation of matter have been noticed."

These remarks are illustrated by the following account of the appearance of the diseased appearance, in a patient who died on the third day of an attack of the disease, supervening on a severe wound of the scalp:

On the 18th, erysipelas appeared in the arm and neighboring part of the forearm, the affected parts being tumid, bright red, and very painful. He died on the 21st, the erysipelas not having extended beyond the parts first affected. He had been bled three times in the

arm. On examination after death, the veins were found perfectly healthy. The skin and adipous membrane of the inflamed part were pale and natural; a large effusion of yellow and somewhat thin, but good pus, was found in the cellular structure connecting the adipous membrane to the muscles along the whole back and inner part of the arm. The matter did not form a distinct collection, but two or three table spoonfuls were found in one part, and it was thence diffused through the cellular substance, without any definite boundary, and seemed to have gravitated into the place where it was found, in consequence of the position of the limb."

Phlegmonous erysipelas differs from the former in the higher degree, and deeper extent of the inflammation, and in the greater severity of the general symptoms. As the more aggravated forms of the disease are rarely to be met with in this country, we shall take the liberty of quoting his description of it:

"The redness is deeper than in simple erysipelas, often with a brownish or dark livid tint; the discolouration is often irregular, giving to the part a marbled appearance; the tumefaction is more considerable, the whole depth of the adipous and cellular textures being loaded with effusion, so that an arm or leg appears of twice the natural size; the sensation of heat and pain, at first slight, is aggravated to a very severe degree, and may be accompanied with throbbing. The swollen part at first yields slightly to the pressure of the finger, but subsequently becomes tense and firm. Vesications form on the surface, often minute and miliary, with purulent contents; (see Cases 27, 28, 29;) frequently however the skin does not vesitate. (See Cases 22, 23, 24, 26.) Suppuration and sloughing of the cellular membrane soon come on, the skin becoming livid and covered with phlyctænæ, (see Case 36,) and the febrile symptoms are aggravated. These changes are not attended with increased swelling, elevation, and pointing, as in phlegmon; on the contrary, there is rather a diminution of tension, a subsidence, and a feel of softness in the part. At first the cellular texture contains a whey-like or whitish serum, (Cases 22 and 26,) which I have sometimes seen in the eyelids, almost of milky whiteness. (See Case 21.) The fluid gradually becomes yellow and purulent, and we often find it presenting all the characters of good pus, and very thick. The serum is diffused through the cells at an early period, and a mixture of serum and pus often fills a considerable portion of the cellular texture without any distinct boundary. (See Case 36.) Frequently matter is deposited in small separate portions, forming a kind of little abscesses, which often run irregularly in the cellular texture. Such small collections are sometimes found where lividity or phlyctænæ have not preceded, and where no external changes nor any aggravation of other symptoms have announced suppuration. During this process of suppuration, the cellular texture

turns grey, yellowish or tawny, (Case 28,) and sometimes appears like a dirty, spongy substance, filled with turbid fluid; (Cases 22 and 29;) then losing its vitality altogether, it is converted into more or less considerable fibrous shreds of various size and figure, which come away soaked with matter like a sponge. The integuments over a large slough of this kind, being deprived of their vascular supply, become livid, and often lose their vitality.* The suppurating and sloughing processes go on to a great extent when an entire limb is affected, sometimes completely detaching the skin, and often separating it through a large space; occasionally penetrating deeper, passing between the muscles, causing inflammation of them, suppuration between them, and often sloughing of the tendons. When the substance of a limb is thus generally inflamed, the joints situated in the affected part do not escape. Inflammation of the synovial membrane, effusion of matter into the joint, and ulceration of the cartilages take place.† An inflammation of such extent and violence cannot fail to excite the most serious sympathetic affections, among which may be mentioned disturbance of the nervous system, causing symptoms of typhoid character, inflammation of the lungs or pleura, of the intestinal mucous membrane, producing diarrhœa, or of the peritoneum, and inflammation or suppuration of other organs. The combination of the primary and secondary affections is speedily fatal.‡ If, however, the patient should recover after tedious suppurations and discharge of sloughs, the parts, which have been inflamed, are so changed in structure, and skin, fascia, muscles, tendons, and bones, are so unnaturally agglutinated and fixed, after the extensive destruction of the connect-

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* Baron Dupuytren, who has particularly noticed this kind of secondary gangrene in his clinical lectures, explains the reason why it does not occur in the head. The seat of phlegmonous erysipelas, or, as he calls it, *diffused phlegmon*, in that situation, is the cellular texture between the fronto-occipital aponeurosis and the pericranium. The sloughing of that texture does not affect the nutrient vessels of the scalp, which lie exteriorly to it, immediately under and almost in the integument itself.

† In a case observed by Mr. C. Hutchinson, the cartilages of the femur and tibia were absorbed; at least there was a complete anchylosis of the knee.—Practical Observations, 2d edit. p. 115. Pus in the ankle-joint; the articular cartilages absorbed, and the tibia carious. Bibl. Med. Sept. 1827. p. 331. In another case, the elbow and shoulder-joints were inflamed, and the articular cartilages ulcerated. Ibid. p. 333.

‡ The mortality under this affection has sometimes been truly alarming. Of fifteen cases which occurred in Plymouth Dock Yard, during August and September, 1824, twelve ended fatally. In the bodies of those who were examined after death, the following morbid appearances were found; viz: sero-purulent effusion into the thorax, with inflammation of the lungs; similar effusion into the abdomen, inflammation of the mucous membrane of the ilium and colon, and of the liver. In one case there was an abscess with a pint of pus round the kidney; and in another, the kidney was converted into a fluid like thick cream. The head does not seem to have been examined in any case.—Dr. Butter's Remarks on Irritative Fever, &c. Devonport, 1825. Sero-purulent effusion into the chest, inflammation of the lung, and of the mucous membrane of the ilium and colon, were the appearances observed in some fatal cases described by Messrs. Moulin and Guibert in the Nouvelle Bibl. Med. September, 1827.

ing cellular texture, that the motions of the part are permanently and seriously impaired.

The affected part which is at first firm and almost brawny to the feel, becomes softer when diffused suppuration and matter mixed with sloughs are under the skin."

As to the seat of the disease, Mr. Lawrence places it in the skin and the cellular membrane, admitting that the fascia may occasionally, although rarely, become involved in the disease, in opposition to the opinion of Messrs. Arnott, Earle, and Hutchinson, who place its chief seat in the fascia.

Mr. L. infers the nature of this disease to be inflammatory. It resembles inflammation in its four leading characters, redness, swelling, heat, and pain, and in its effects, effusion, suppuration, and sloughing. He is disposed to place it between the exanthemata and phlegmon. It is more circumscribed than the former, and more diffused than the latter. The exanthemata are confined to the skin, and phlegmon primarily attacks the cellular membrane, while erysipelas simultaneously attacks both. The most important distinction between erysipelas and phlegmon, appears to arise from the difference of the effusion, serum being poured out in the one case, and coagulating lymph in the other.

The author is not disposed to agree with those who regard erysipelas as a distinct species of inflammation, capable of attacking other structures besides the skin. The symptoms of erysipelas are so clearly referable to the peculiar structure of the skin, and cellular structure, that we certainly could not expect to meet with it in parts as differently organized, as the serous membranes and the viscera. There is some analogy between the structure of the mucous membranes and the skin, and we might consequently expect some similarity in their disases; but although these surfaces mutually exert a powerful influence over each other, we see nothing like a similarity in their diseases. An erysipelatous opthalmia has been described, but it bears very little resemblance to true erysipelas; and when the disease attacks the face in its most violent form, it seldom extends to the eyes or the mucous membrane of the mouth. It is indeed frequently accompanied by inflammation of the mu-

cous membrane of the fauces, but this affection differs in many important particulars from the disease under consideration.

The author thinks there is a marked difference between phlegmonous erysipelas, and diffuse inflammation of the cellular texture, as described by Dr. Duncan. This affection sometimes appearing spontaneously, and sometimes conseqnent upon external injury, spreads deeply in the cellular texture, and among the muscles, causing extensive sloughing and suppuration; but in this disease, the skin is either unaffected, or affected only secondarily from the extension of the inflammation of the cellular membrane. In some of the cases, the skin was unaffected, although extensive suppuration of the cellular membrane, and in one case, mortification was ascertained by dissection. The muscles are also frequently affected, being changed in color, and sometimes so soft as to be easily lacerated.

Mr. L. looks upon erysipelas as decidedly an inflammatory disease.

"I am quite at a loss to discover in this affection those marks of debility which some have insisted on. Erysipelas, like any other inflammation, may occur in old and feeble persons, and the effects of the disease, when aggravated by injudicious treatment, or protracted from any cause, will soon weaken the most robust; but however weak the patient, the local disturbance is one of excitement; there is increased activity in the circulation of the part, clearly marked by all the symptoms. Indeed, speaking of the part, I am unable to recognize debility as the cause of any inflammation whatever, and in reference to the seat of disease, I regard the expressions of passive and asthenic inflammation and venous congestion, as either unmeaning, or calculated to convey erroneous notions."

He thinks phlegmon and erysipelas are not different in their essential nature, and we have a confirmation of this opinion, in the fact, that these diseases so frequently run into each other, that in many cases we scarcely know whether to refer the disease to one or the other. The diagnosis between the extremes is easily established, but between these, there is a numerous class of cases that may as well be referred to the one as the other. "Thus we occasionally find sloughs in abscesses, that must be considered phlegmonous; and we see circumscribed collections of matter in erysipelatous inflammations. Erysipelas is some-

times confined to one spot, while phlegmonous inflammation may extend its circumference, attacking fresh parts successively, so as to produce suppurations, and thus spread over a large part, or the whole of a limb;" and in chronic cases, the diagnosis is still more obscure.

In like manner, phlegmonous erysipelas is easily distinguished from cellular inflammation; but they insensibly run into each other; as this last does also into simple edema.

The causes of erysipelas are analogous to those of other inflammatory diseases; accidental or constitutional causes determining, whether the skin, or other parts, shall be the seat of the disease. In most cases of this disease, the digestive and biliary organs are much deranged, sometimes as the cause, and frequently as the consequence. The great majority of cases of phlegmonous erysipelas are idiopathic, produced by local irritation. Traumatic erysipelas may always be prevented by suitable dressings and diet. Simple erysipelas more frequently arises from internal causes, especially disorders of the primæ viæ or liver.

Treatment.—The author's opinion of the disease, would lead, of course, to an antiphlogistic mode of treatment, venesection, local bleeding, purging, low diet, with saline and diaphoretic medicine. Vigorous treatment at the commencement will frequently cut short the disease. In slight cases, the necessity of immediate relief is not so urgent, as in affections of the vital organs; yet the serious consequences which frequently result, render an efficient mode of treatment at all times advisable. When it proceeds from visceral affection, the removal of the cause will indeed cure the disease; but even in these cases, venesection is very frequently useful, both to the internal and cutaneous disease. The following remarks should be impressed on the mind of every young practitioner:

"It will appear from the foregoing remarks, that in contending for the inflammatory nature of erysipelas, and for the propriety of treating it antiphlogistically, I do not mean to recommend, that measures equally active, and, in particular, that bleeding, whether general or local, are to be employed in all cases. In young persons, in the robust and those of full habit, in instances where the pulse is full and

strong, or when there is head-ache and white tongue, in erysipelas of the head, attended with symptoms denoting affection of the sensorium, and more especially in the very beginning of the affection, venesection will be proper, and it may be necessary to bleed largely, to repeat the evacuation, or to follow venesection by local abstraction of blood. (Cases 7, 8, 9, 11, 12, 13, 17.) Under such circumstances, the other parts of the antiphlogistic plan must be also employed, that is, the alimentary canal should be cleared by an active purgative, which may be followed by salines and antimonials, with the occasional use of milder aperients; and low diet should be enjoined. Nothing can be more different from such a case, than that of an elderly person with a small and feeble pulse, in the advanced stage of the disease. The interval between these extremes is filled by numerous gradations requiring corresponding modifications of treatment. The antiphlogistic plan itself embraces a wide range in point of degree; from blood letting, local and general, with purging, vomiting, the free use of mercury and antimony, and low diet, to the exhibition of a mild aperient, with some saline medicine. (Case 19.) The treatment of erysipelas, like that of any other inflammation, must be modified according to the age, constitution, previous health and habits of the patient, and the period of the complaint. In asserting generally that the antiphlogistic treatment is proper, I speak of the beginning of the disease, when the original and proper character of the affection is apparent; and I am decidedly of opinion that, in some shape or degree, such treatment will always be beneficial in that stage."

Of the different modes of local depletion, Mr. L. prefers cupping, where it can be applied or borne. The apprehension expressed by Willan and Thompson, respecting the bite of leeches, the author asserts is perfectly groundless.

In support of the practice of bleeding, the author cites the practice of many distinguished medical writers, and, among others, of the French physicians; who not only apply them to the inflamed surface, but, if there be febrile excitement, apply them also to the epigastrium. At the same time, he admits that an array of names, equally formidable, may be advanced on the other side, recommending a course diametrically opposite. Mr. L. can conceive of no satisfactory principle upon which these opposite opinions may be reconciled.

Mr. L. places little confidence in emetics, without the aid of more efficient measures, although he gives them when the tongue is furred, and fever is present, with sickness or nausea. Under similar circumstances, he gives calomel, either alone, or

in combination with some powder, until the bowels are opened, and the tongue becomes clean.

When the inflammation is arrested, tonic remedies are to be resorted to, with caution. If injudiciously used, the fever is renewed, and much injury frequently produced. In some cases, they are useful at first, but soon cause a return of the complaint, if persevered in. Where a doubt exists of the propriety of this class of remedies, the carb. of ammonia may be given without danger, and with marked advantage—Next to this remedy, he prefers sulp. of quina, and occasionally admits, for a short time, of the sparing use of wine.

Local applications produce but temporary relief. Before the inflammation is developed, cold applications are useful, by lessening the heat of the skin; and, after it is established, warm fomentations, if steadily used for a long time, are very soothing. Of the use of blisters, he says but little, although he has tried them three or four times in simple erysipelas of the extremities, in the manner recommended by Dr. Physic, (although without recognizing the claims of that gentleman,) and with success. Compression of the limb by bandages, he condemns most unequivocally, as a practice fraught with the most dangerous consequences.

The treatment of phlegmonous erysipelas corresponds with that above laid down, except that local bleeding is much preferable to the lancet. Venesection, Mr. L. remarks, exercises but little influence over cellular inflammation; and, therefore, when he resorts to it in this disease, it is rather with a view to the general febrile symptoms, than to the local disorder: for, if the disease is not speedily arrested, further depletion is of no avail, and the disease will spread in spite of bleeding, whether local or general.

The treatment, however, upon which the author relies, more than upon any other, is, by incisions through the inflamed skin and subjacent adipose, and cellular membrane.

"These incisions are followed very quickly, and sometimes almost instantaneously, by relief and cessation of the pain and tension; (Cases 24, 28, 30, 31;) and this alleviation of the local suffering is ac-

companied by a corresponding interruption of the inflammation, whether it be in the stage of effusion, (Cases 21, 22, 23, 24, 26, 28, 30, 31) or in the more advanced period of suppuration and sloughing. (Cases 20, 22, 25, 27, 29.) The redness of the skin is visibly diminished during the flow of blood from the incisions; in twenty-four hours it has usually disappeared, and the skin itself is found wrinkled from the diminution of the general inflammatory tension. The immediate relief, although very desirable to the patient, is however of less consequence than the decided influence of the practice in preventing the further progress of the disorder; and this important result has never failed to occur, within my experience, when the case has been a proper one for the practice, and the state of the patient has admitted of its being fairly tried. The cases already referred to furnish the clearest evidence on these points.

The treatment by incision is suited to various stages of the complaint; but it is employed to great advantage at the beginning, since it prevents the further extension of inflammation, and the occurrence of suppuration and sloughing. (Cases 30, 31, 24, 26, 28.) The redness and swelling gradually subside; the surface of the cut granulates, and it heals rapidly. At a more advanced period, the incisions limit the extent of suppuration and gangrene; and at a still later time, they afford the readiest outlet for matter and sloughs, and facilitate the commencement and progress of granulation and cicatrization. When the matter has been fully discharged, and the sloughs, whether of the skin or cellular membrane, have separated, a healthy granulating surface is left, and no great difficulty is experienced in effecting cicatrization, unless the destruction of the skin should have been very extensive, when the cicatrix forms slowly, and is liable to give way again."

The author recommends incisions only in cases of phlegmonous erysipelas. The milder cases, and the early stages of more severe ones may be trusted to antiphlogistic remedies; but, as the disease is often insidious, we should be on our guard and not suffer it to proceed too far, before the remedy is resorted to.

In erysipelas of the face, this mode of treatment is not necessary, unless the disease attack the cellular membrane immediately above the eyebrows. In this part, it is frequently followed by suppuration, sloughing, and mortification of the skin, and here this mode of treatment is frequently necessary. In erysipelas of the scalp, when the disease attacks the cellular membrane under the aponeurosis, this mode of treatment is imperiously called for at an early period.

After the incisions, the parts should be covered with warm fomentation cloths, until the bleeding ceases; a poultice should

then be applied, until suppuration is established; and, if the discharge does not soon take place, lint, spread with some stimulating ointment, should be applied under the poultice, until that event takes place. When suppuration is established, large portions of cellular membrane are often discharged, and extension of the incision is frequently necessary to facilitate their separation. When this process is completed, especially if the sloughing is extensive, the pressure of a bandage will be serviceable in promoting the cure.

This mode of treatment has been in some cases successfully extended to the erythema anatomicum. In one case of this kind, under the care of Mr. Earle, incisions were made on the sixth day, when the case of the patient was perfectly desperate. The limb was greatly swollen, and extremely painful from the arm to the shoulder, the pulse rapid and small, and the countenance anxious and haggard. As a last resource, three incisions were made, one in the arm, and two in the fore arm, which bled so copiously that three pounds and a half of blood were estimated to be lost; when so sudden and complete was the relief, that in six hours he was considered perfectly out of danger.

The mode of making the incisions, adopted by Mr. Lawrence, is somewhat different from that pursued by Mr. Hutchinson. The latter recommends a number of smaller incisions, under the impression that the relief, in severe cases, extends to but a small distance from the incision; while the former thinks that one incision, carried through the whole length of the inflamed part, will answer every purpose, and will be less objected to by the patient. Mr. H. remarks that there will be less danger from hæmorrhage, if the incisions are of smaller extent; and, if extensive sloughing or suppuration is threatened, or has already taken place, the disease will be more readily relieved. The suggestion, respecting hæmorrhage, is certainly of consequence; for, when the inflammation is considerable, such is the tendency to hæmorrhage, that, in some of the cases detailed by Mr. L., the flow of blood was very alarming, and, in one case, was probably fatal.

Dr. Dobson, surgeon to the Royal Hospital, Greenwich, has adopte a modification of this mode of treatment, consisting of numerous punctures in the inflamed part. Punctures, varying from ten to fifty in number, are carried, from two to four tenths of an inch, into the cellular membrane; and this process is repeated two, three, or four times a day, according to the urgency of the case. A further account is given of this practice, in a subsequent part of this Journal.

The fourth article is a paper by Mr. John C. Ferguson—*Auscultation the only unequivocal evidence of Pregnancy;* and the fifth is a paper from the Dublin Hospital reports—*Observations on the Utero-Placental Circulation, and the phenomenon of Placental Soufflet*—By Evory Kennedy, M. D. On applying the ear, either immediately or by the interposition of the stethoscope, to the abdomen of a pregnant woman, there will be heard, at some part of the uterine tumour, provided the pregnancy be sufficiently advanced, a peculiar sound, bearing more or less resemblance to the action of a bellows, and denominated, by its discoverer, Kergaradec, the *Placental Soufflet.* The following account of this phenomenon is given by Dr. Kennedy:

"Although the placental soufflet does not always exhibit the same unvarying characters, yet these are sufficiently marked to render it recognizable in almost every case. It assumes all those varieties described by Lænnec under the head of Bellows-sound. The bellows-sound, properly so called, likened by this author, to the continuous murmur similar to that of the sea, familiarly exemplified by the application of a large shell to the ear; the rasping or sawing sound, which is occasionally found so exactly imitated as to lead the listener to imagine that an artisan is at work quite close to him; and the musical or hissing sound, partaking of the vibrating character so well described by the above named author. In addition to these, I have at times observed this phenomenon resembling the cooing of a dove, but this is particularly rare. A more frequent peculiarity which I have noticed, is a strange drone, resembling that of a bagpipe accompanying the sound, coexisting without interfering with it. The most constant form we meet with, however, is a combination of the bellows, or the sawing with the hissing sound, commencing with one of the former, and terminating with the latter, which is in some cases so lengthy and protracted, that the last soufflet is audible when the subsequent one commences, seeming thus to run into each other. These sounds are, from

the distension of the uterus and consequent facility of examination, easily discovered in advanced pregnancy; and although not so loud and sonorous in the earlier stages, yet to the practiced ear are quite as distinct. I have not observed any of the above mentioned sounds peculiar to particular stages of pregnancy, having detected them indifferently throughout all. This phenomenon is perceptible over an extent of surface greater or less, according to circumstances; it may have its seat in any part of the uterus, and cases will occur, although if proper precautions be had recourse to, very rarely, where we shall not be able to detect it."

Dr. K. supposes this sound to be produced by the passage of the blood through the arteries of the uterus, to which the placenta is attached, and through those of the maternal part of the placenta. It will be recollected by the medical reader, that the circulation in the fœtal and maternal part of the placenta are independent of each other, each being kept up by the action of the heart of that system to which it belongs; and that the action of either may be kept up for some time, although that of the other be suspended or destroyed. It is the latter of these that the author supposes to give rise to the placental soufflet, and his opinion is sustained by the following facts.

1. This sound is heard only when the placental circulation exists, and ceases when the vessels which connect the uterus and placenta cease to transmit blood; as when the uterus is empty and contracted, or when the circulation ceases, in consequence of the death of the fœtus.

2. The sound is always heard in that part of the uterus to which the placenta is or has been attached.

3. The sound is synchronous with the mother's arterial pulsation.

4. The sound does not necessarily terminate with the life of the fœtus, nor with the expulsion of the placenta, but frequently continues after those events, as long as the contraction of the uterus remains imperfect. The soufflet, also, is very frequently observed in after pains, sometimes as late as two days after delivery. Dr. K. remarks that it sometimes continues for a considerable time after the vitality of the fœtus is destroyed, as it is perceptible after the action of the fœtal heart has ceased, and has continued to be so, when the marks of putrescency on the chil-

dren proved them to have been long dead. From this fact, accompanied with the circumstance that the placenta, under these circumstances, is frequently discharged, loaded with fluid blood, he infers that a connection between the uterus and the placenta, sufficient to preserve the vitality of the latter, is frequently kept up after the fœtal circulation has entirely ceased.

But, although the sound continues after the interruption of the fœtal circulation, it is very materially altered in its character—"abrupt, of short continuance, and wanting the lengthened terminating whiz, of the perfect placental soufflet."

Persons unaccustomed to the use of the stethoscope should bear in mind that they may be deceived by other sounds, either from their resemblance to the placental soufflet, or the effect they have in concealing it. The *respiratory murmur* is sometimes conducted from the lungs, from the thoracic along the abdominal parietes. The *sonorous rale* somewhat resembles the *placental soufflet*, and this is conducted over the abdomen in the same way with the respiratory murmur. We may distinguish these by their not being synchronous with the pulse; and by tracing the sound along the abdomen, it becomes more distinct, as we approach the chest.

The abdominal aorta, and its large branches, sometimes give a sound more nearly resembling the *bruit de soufflet*, although still very easily distinguished by one accustomed to the sound. This sound is rarely heard in the aorta; and when it occurs in the iliac arteries, it is generally heard on both sides. The *placental soufflet*, also, may be heard over a larger portion of the abdomen, and is not confined to the immediate vicinity of the artery.

The *placental soufflet* and the fœtal heart are seldom heard before the fifth month of pregnancy, although, by accurate examination, they may be distinguished as early as the tenth or twelfth week. The former is generally heard in one or other of the iliac regions, though it may occur in any part of the abdomen; but, wherever it does occur, for obvious reasons, it remains stationary during the whole of pregnancy. The fœtal heart, on the other hand, is constantly changing its position.

The importance of these sounds, as a test of pregnancy, will be obvious to every one. It is now acknowledged, by all writers on the subject, that there is no unequivocal test of this condition; but, wherever these two sounds can be heard, there can be no longer a doubt, and they can almost always be ascertained, where pregnancy is much advanced; the stethoscope therefore, may be looked upon as a test of universal application.

In protracted labors, where the life of the mother is in danger, this instrument may be satisfactorily applied, to ascertain the life of the child, and thus to learn whether any objection exists to expediting the labor, by destroying the infant.

Dr. K. further remarks, that in the Cesarean section, the *soufflet* may act as a guide, and thus enable us to avoid wounding the large vessels; a circumstance which, in the case recorded by Dr. Henderson, produced death, by hæmorrhage.

Passing over several papers, we come to one *on the comparative infrequency of Urinary Calculi among seafaring people*—By A. Copland Hutchison, Esq.

The following extracts will show how astonishingly small is the number of seamen affected by this disease. The average number of men, annually voted by parliament to man the British navy, from January, 1800, to December, 1815, was 132,000. The author, taking into consideration the number of men who were lost to the service, in consequence of sickness, wounds, and desertion, thinks that the whole number, at the disposal of this branch of the service, during this period, could not be less than 162,000.

"I have taken considerable pains to ascertain the prevalence of calculous disorders in the naval service, and the result of my inquiry is, that out of the mass of individuals of which it is composed, only *eight* cases have occurred in the period of the *sixteen years* before specified, all of whom had been operated upon in the naval hospital of Halsar, Plymouth, or Deal, and of whom one only died. In the other royal hospitals, namely, Yarmouth and Peignton, no patient laboring under Urinary Calculus having been admitted, I have purposely omitted taking them into the account, as well as the foreign hospitals of Halifax, Jamaica, Antigua, Barbadoes, Gibraltar, Malta, the Cape, and Madras; being satisfied, after the strictest examination, that the operation of lithotomy had never been performed at any of these es-

tablishments. If cases of this kind had occurred abroad, and owing to the unfavorable nature of the climate or other causes, the surgeons had deemed it advisable not to operate; the patient so circumstanced would have been forwarded to the great naval hospitals at home; and therefore, we shall be fully warranted in concluding, that eight cases of stone only had really occurred among the vast mass of seamen and marines composing our naval force at home and on foreign stations, during that eventful era, that is, between January, 1800, and December, 1815."

Mr. H. ascertained, from a reference to the books of these hospitals, that the number of seamen received into them, amounted to 96,000. Deducting, in round numbers, 10,000, for gunshot wounds and other accidents to which sailors are exposed in time of war, above the average of other hospitals, and we have only one calculous patient, out of nearly 11,000. A reference to the number of calculous patients, in other hospitals, will show how very small is the proportion of persons affected with these diseases, among mariners, and even this small ratio, it will be found, is very much diminished by investigating the history of the patients. It is, also, to be remembered, that the patients in these hospitals are all males; among whom the proportion of calculous patients is seventeen times greater than among females.

"Dr. Marcet states the proportion of stone cases received into the different British and Continental public hospitals, Norwich alone excepted, to be *one* for every *three* or *four hundred* patients of all descriptions admitted. In the Norwich hospital it appears to be *one* in every *thirty-eight* cases, a proportion prodigiously great, and which places in a striking point of view the untoward prevalence of this afflicting malady in the Norfolk district, over that of every other throughout Europe, as far, at least, as our present knowledge extends, from whatever cause that extraordinary circumstance may arise. The paucity of stone cases occurring in tropical climates has also been remarked by Dr. Marcet; and far as the fact already stated goes, of no patients labouring under this disease in question, having been admitted into our foreign hospitals, it tends to strengthen the observation.

Of the eight cases of calculous concretions before mentioned as having occurred out of the vast mass of patients admitted into our naval medical establishments in England, two were boys about 14 years of age, who had laboured under symptoms of stone for some years previously to their admission into the service, and into which they had recently entered, expressly for the purpose of deriving benefit from our magnificent institutions; one was a marine, about twenty-two

years of age, who had been at sea a few months only; three were adult seamen, and the seventh a marine; but their length of service afloat *could not be at all* ascertained: the eighth and last case was a warrant officer, advanced in years, who had been serving in ordinary, that is, in a ship in harbour, for a considerable time previously to the operation, and the only case which terminated fatally.

In the admissions into naval hospitals, both officers, under the rank of captain, and privates are included, and excepting the case of one warrant officer, whose diet differs not materially from that of the seamen, it will be found that no officer has undergone the operation of lithotomy in any of these establishments. It is but just, however, to notice the cases of two naval gentlemen, the one a captain, the other an hospital surgeon, who were operated upon in London, as I have been since informed; but whether the first contracted symptoms of the complaint at sea or while residing on shore, I have not been fortunate enough to discover."

The following quotation will give the author's ideas of the cause of this remarkable exemption:

"On the ship's arrival in port, the men are amply supplied with good fresh beef, vegetables, and sound table beer, while victualling and watering, which, however, in time of war is generally limited to a very short period, especially when commanded by an active and zealous captain. On these occasions, it is incredible to see what quantities of salt the seamen will use with their fresh beef. During their stay in port, and for some days after, each man is allowed a gallon of good beer; and at other times, when this wholesome beverage can no longer be procured, a pint of wine or half a pint of spirits in lieu thereof; the latter previously diluted with three portions of water, is served out daily to each man at two distinct periods.

The beef or pork commonly issued to the ship's company at sea is so highly salted, and frequently kept so long in its briny pickle, that its bland and nutritious juices are in a great measure exhausted. Excepting in ships of war of the first and second rate, a portion of one deck only is appropriated to the whole ship's company to sleep in, and this is consequently so crowded with hammocks, and the men so impacted together, (fourteen inches in width being the total space allowed to each individual,) that some dexterity is requisite to obtain ingress and egress to and from their beds. The lower deck being always the part allotted for repose, the ports are for the safety of the ship necessarily closed all night, and the temperature of the surrounding air is thereby so exalted, that the place becomes a kind of steam bath from animal exhalation, the men being literally immersed in their own perspiration.

Dr. Dobson remarks, that calculous disorders are much more frequently met with in the cider counties than in other parts of England, and as it would appear from what has been here advanced, that sea-

men who have rarely opportunities of indulging in the use of malt liquors, are in great measure exempt from urinary concretions, it may therefore be asked, whether all kinds of fermented liquors be not favorable to the production and accretions of such disorders?

From Dr. Marcet's and Dr. Prout's remarks, it would appear, that an active and healthy state of the digestive organs is one of the most effectual preventives against the formation of calculi; may it not therefore happen, in the instance of seafaring men, that the peculiarities of their regimen, and especially the great quantities of muriate of soda they habitually take with their food, contribute to produce this effect? or in other words, shall we be justified in imputing to the stimulus communicated to and maintained in the whole chylopoetic viscera by the muriate of soda, a power to counteract the aggregation of calculous matter in the urinary organs, independently of any direct chemical agency?

It has been already stated, that seamen belonging to ships of war, are so closely impacted whilst in their hammocks, that they are continually suffused with perspiration during the whole period allotted to repose: and there is also such a perpetual mutation in the various stations appointed to the ships of war to cruize in, that few seamen escape their performance of their round of duty in the tropical and other hot climates, bearing an equal proportion to the time spent in the more temperate climates of Europe; and consequently there must be a much more profuse discharge from the exhalants on the surface of this class of men, than of those residing in Great Britain or in more northern latitudes.

I am the more particularly induced to notice these circumstances, because it has been ingeniously suggested among other causes, 'whether there may not be some essential connexions between the state of the cutaneous functions and the greater or less prevalence of this class of disorders?'"

* * * * *

"The life of a seaman is one of great activity, and often of considerable labour and exertion. I have frequently observed, in common with other officers, that sailors never fail to empty the bladder on the first symptoms of distention; and the facilities afforded them, as far as regards unmixed society and locality, favour greatly this salutary habit. It is also of importance to notice, that no description of people are less subject to dispepsia, or more prone to strictures in the urethra.

* * * * *

From various parts of the preceding premises, then, we may with some degree of probability infer, that animal food, combined with a certain portion of the muriate of soda, in conjunction with farinaceous aliment, on which seamen principally subsist, are favourably to the prevention of calculous aggregation.

To acquire this prophylactic property, it may be essential that the animal food should be saturated with salt previously to its use, as we learn from Dr. Wollaston, that when free from saline matter, animal food favours the generation of lithic acid, at least in carniverous

birds; whether similar effects follow its application to the human stomach, has not yet been ascertained, I believe; but reasoning from analogy, we might be induced to conclude that such would be the consequence.

With respect to the practical inferences to be deduced from almost the total absence of calculous disorders in tropical regions, the exhibition of sudorifics would appear to be indicated, as offering a prospect of preventing the malady altogether, or of alleviating its further progress when once established. It is well known that the cuticular exudations are vicarious with the renal secretions, and the most superficial observer must have witnessed, that when the cutaneous discharges are abundant or increased, micturation is proportionably diminished. Dr. Wilson has remarked, that Dover's powder and tartarized antimony (which are powerful sudorifics,) when administered to individuals, invariably lessen the quantity of lithic acid in the urine.

From the foregoing observations it would appear, that exercise is not only conducive to general health, but acts as a preventive to the disease in question, and probably may be used with material advantage even when calculi are known to exist, the *quantum* of course to be regulated by the magnitude or irritation produced by the calculus in motion."

In addition to the information obtained at these hospitals, Mr. H. made inquiry of E. Home, Mr. Cline, and Astley Cooper. The two first had never operated upon a seafaring person, and the last had been consulted by one naval officer, laboring under evident symptoms of the stone, but whom the author afterwards learned had not been employed at sea for the last twenty years of his life.

Mr. H. mentions, that in the Royal Hospital at Greenwich, appropriated to decayed seamen, and containing 2,700 patients, the physician to the institution did not recollect of a case having occurred, during his professional attendance, for twenty-seven years.

Since that time, Mr. Hutchison has extended his inquiries to most of the seaport towns in England and Scotland, and ascertained, that in them all, there was scarcely an instance of the operation having having been performed upon a seafaring person.

The Clinical Reports, of the Meath Hospital, by Drs. Graves & Stokes, of Dublin, are exceedingly valuable; but we have room for but few extracts. As the plan of treating pneumonia, by

large doses of tartar emetic, is almost unknown in this country, we will present to our readers, the remarks of these gentlemen upon this subject:

"The plan of treatment which we have found of the greatest efficacy in combatting simple pneumonia, is the use of the lancet, and the exhibition of the tartar emetic in full doses. As this latter forms a mode of treatment not yet extensively adopted in these countries, we shall put our experience of it on record.

The cases in which this treatment is most applicable, are those where the disease is in the early stages, where it occurs in strong constitutions, and lastly, where there is absence of gastric symptoms. This is a point of great importance, and we shall refer to it presently.

It is during the existence of the first stage of the pneumonia, while the crepitating rale is heard most distinctly, and before the affected portion of the lung sounds dull on percussion, that we find the remedy to answer best: six grains are generally administered the first day, and the dose is increased by two or three grains daily, until fifteen grains are exhibited in the twenty-four hours. Beyond this dose we have never found it necessary to go; but we have been able to persist in the exhibition of the remedy at this rate for many days, and with the best effects.

The cases in which we have found it necessary to continue this treatment longest, are those in which an acute pneumonia has supervened on a chronic catarrh. In one case of this kind, in which the pneumonia was double, one hundred and eighty grains of the tartar emetic were exhibited at the rate of twelve grains daily. In this case the tolerance of the remedy was completely established after the second or third day. Indeed, towards the termination of the disease, the patient's appetite was excellent, although he was taking the remedy at the rate mentioned. This we have often seen in other cases, a fact already observed by Lænnec.

We have very seldom observed abdominal irritation to follow the exhibition of the remedy, even where large quantities have been taken. In a few cases, after the subsidence of the pulmonary disease, colicky pains occurred, but these almost constantly yielded to stuping, mild laxatives, and opiates. In one case, however, they were so severe as to require blood-letting: the blood was cupped and buffed, and the patient recovered perfectly.

* * * * *

With respect to blood-letting in pneumonia, we rely more on it as a means of combating the inflammation than Lænnec appears to have done. Except in cases of pneumonia combined with hypertrophy of the heart, he considered bleeding more as a mode of preparing the patient for the exhibition of tartar emetic, than as calculated directly to remove the disease. We consider, on the contrary, general and local bleeding to be of primary importance, while the tartar emetic is a very useful adjuvant. Thus, on any sudden exacerbation of the dis-

case, we do not trust to increasing the dose of the remedy, but have at once recourse to general or local bleeding, as the case may be; and we may here remark, that in the treatment of acute bronchitis and pneumonia, when occurring in the adult, local bleeding has been too little praticed in this country.

In some cases we find that the first dose of the remedy makes the patient vomit freely, but after a few more doses the medicine is borne well. But in the greatest number of cases a state of slight nauseau, without vomiting, is kept up, and continues for several days, and indeed as long as the remedy is administered.

Sometimes we have found both vomiting and purging to follow at first, but to subside after twenty-four hours. Diaphoresis is a rare effect, and we have often witnessed cases where the patient was taking from ten to twelve grains of the medicine daily, without vomiting, purging, or sweating; so that no effect could be observed, except a gradual reduction of the symptoms, and stethoscopic phenomena.

We generally find, in cases of simple pneumonia, when the disease is confined to the lower portion of one lung, that when we commence with the exhibition of six grains in the day, and increase this at the rate of a grain daily, we are able either to omit the remedy, or begin to diminish it in the course of four or five days. We seldom omit it suddenly, as more than once a severe relapse has followed this practice."

It is remarked, that in many cases of pneumonia, with great dyspnea and lividity, great improvement followed venesection and the exhibition of tartar emetic; but on the following day, no improvement in the condition of the lung was discovered by the stethoscope. These were all cases of partial pneumonia, with general bronchitis, and the improvement was owing to the beneficial influence of the remedies on the latter disease, while the patient was still in considerable danger from the former—a fact, of which every practitioner should be aware, in the treatment of pneumonic inflammation.

The last paper is one by Professor Marsh, of Dublin—*Observations on a peculiar convulsive disease, affecting young children, which may be termed Spasm of the Glottis.* Dr. Clark, in his commentary on the diseases of children, has described a spasmodic affection, which he terms "a peculiar convulsion in infant children." This disease, says the author, appears to consist primarily in spasm, occurring suddenly, and affecting the muscles of the glottis, as it increases in severity, extending to other muscles, particularly those of the fingers and toes; and,

if neglected, or maltreated, is liable to lead to severe and universal convulsions. This disease, although alluded to by several authors, is not generally recognised, and the intention of the author is to direct the profession to it. The character and varieties of the disease are illustrated by cases, of some of which we proceed to give a concise account.

The disease sometimes exists alone, without any discoverable irritation or disease coexisting with it; more frequently however, it is complicated with painful dentition; with derangement of the digestive functions; with a cachetic state of the system, produced by bad diet or impure air; with fever, and occasionally, with effusion into the ventricles of the brain.

Case 1. "A child, eleven months old, remarkably healthy, and in appearance well thriven, had been for some time affected in the following manner: it had been observed, now and again, to awake suddenly from sleep in a state of alarm and agitation, to struggle for breath, and, after repeated efforts to recover from the paroxysm, with a long and sonorous inspiration; the convulsive effort was described to be severe, and the face to become swollen and purplish: these attacks occurred, at first, only on awaking from sleep, afterwards more frequently; sometimes without any perceptible cause, at other times, and more frequently, when she was vexed or was about to cry. On examining the child accurately, I could discover no deviation from a state of perfect health; the pulse and respiration were natural, skin cool and soft, tongue clean, the breath pure, the appetite good, the bowels regular; the alvine excretions exhibited the appearances usual in healthy children on the breast. She was playful and lively, but was startled unusually by any sudden noise; the four incisor teeth had appeared; the gums were neither swollen nor tender.

The treatment consisted in half grain doses of sulphate of quinine every sixth hour, and free exposure to the open air; the attacks became less frequent, and after some days ceased altogether. She has since (during a period of two years) remained in very good health.

Case 2. A patient whom I had been attending, happened to mention to me accidentally, that her child, about fourteen months old, was in the habit of awakening suddenly from sleep as if alarmed, breathed with difficulty, and made a loud noise like that in a fit of the hooping cough; she said also, that this occurred occasionally during the day, when the child was cross; she spoke of this lightly, as of an unimportant thing. I requested to see the child; it looked pale and unhealthy; the integuments were soft and flabby; the tongue coated; the bowels relaxed or confined; the stools green and curdy; the child was irritable and nervous, and seemed to suffer from dentition; the

extremities were slightly swollen, and the thumbs placed firmly across the palms of the hands. I stated that I thought the child very ill, and that probably convulsions would take place.

Next day I was summoned in haste, and found the child just recovered from a severe paroxysm of general convulsions.

The gums over the projecting teeth were divided; leeches were applied to the temples, cold lotions to the head, and warm fomentations to the extremities; aperient medicines were given; the nurse, whose milk obviously disagreed with the child, was changed; and it was removed from the city to a healthy situation in the country; after one other attack of convulsions, recovery was speedy and complete.

In this case the disease was complicated with derangement of the digestive functions, and also with painful dentition: the convulsive paroxysms, at first partial, increased in severity, and at length became general. The remedies which appeared to be ultimately and permanently efficacious, were, change of air and change of nurse."

Case 3. The advice of Dr. M. was requested for a fine child, 12 months old, which had been subject for four months to what was called "croupy breathing." The attacks, which occurred at first rarely, and only at night, produced so little derangement of the health, that very little attention was paid to them. But having increased in severity, medical aid was called in, when under the supposition of pneumonic inflammation, the patient was treated by bleeding, emetics, mercurial cathartics, and confinement to a warm room. When Dr. M. first saw the patient, the attacks were excited by the slightest cause, such as sudden noises, the removal of the child from the nurse's arms, &c. The struggle in breathing was protracted, the face became livid, and frequently this terminated by protracted and severe convulsions; the extremities were swelled and puffy, with a spastic rigidity of the fingers and toes; the digestive functions were very much deranged; and after one of the attacks strabismus had occurred.

The child, which had been weaned, was again provided with a wet nurse; the temperature of its room was lowered; and it was gradually accustomed to the external air. Under this treatment he rapidly recovered his health.

Case 4. A weak and delicate child, whose constitution had been very much impaired by previous disease, and the treatment to which he had been subjected, was subject to sudden

attacks of dispnœa, in which the respiration was short and frequent, the head drawn back, and the sense of suffocation urgent. These attacks, which were protracted and severe, ended in a loud whoop or crow. When Dr. M. saw this child, he was confined to the bed with remittent fever; there was also spastic contraction of the flexor muscles of the fingers, the extremities were swollen and livid, and the child suffered severely from dentition. The gums were lanced, and under a treatment adapted to his febrile condition, the spasms subsided, and the child remained free from them for some weeks.

After some time, however, they returned with so much violence, that respiration was sometimes entirely suspended. Under these circumstances, it was determined to bleed the child until a sensible effect was produced upon the system. In consequence, there was no return of the spasm for ten days; but the system was prostrated, and at the expiration of this time, all the symptoms returned, accompanied with great debility. A tobacco enema at this time suspended the spasms, and there was no return of convulsive movement for a month. About this period, on a slight recurrence of the symptoms, the child was removed to the country, where he rapidly recovered.

In several cases which terminated fatally, there were scarcely any appearances found, on dissection, to account for the fatal event, the spasm of the glottis having subsided after death.

The author sums up his view of the disease in the following words:

"It seems to me not important to remark, that all the cases of this disease, which I have witnessed, have occurred in children either themselves exhibiting marks of the strumous diathesis, or sprung from scrofulous parents. This bears practically upon the subject, inasmuch as it enhances the value, in treatment, of pure air, healthy nutriment, and tonic remedies.

If we take a survey of the several cases of this disease, which have been stated, we learn that it varies much in degree, and that its complications are numerous. In its mildest and least complicated form, the spasmodic action is confined to the muscles of the glottis, and the treatment consists in improving the general health, and in giving tone to the nervous system. The symptoms in such cases will rarely fail to yield to some of the vegetable or mineral tonics, pure and bracing air, and a well regulated diet: in some cases, I have perceived, I

think, advantage to arise from some of the antispasmodic medicines, and amongst these, none has appeared to me more beneficial than the old-fashioned medicine, the Tinctura Fuliginis; but when the disease is complicated with painful dentition, derangement of the bowels, or any febrile movement in the system, the primary object of the treatment must be, to remove these accompanying ailments; until this be effected the treatment applicable to the spasmodic affection, though it may mitigate its severity, will fail to eradicate the disease. When the spasmodic symptoms extend themselves, and implicate the muscles of the extremities, the disease assumes a more formidable aspect, and soon, if not checked in its progress, paroxysms of general convulsions will establish themselves; in this stage the membranes of the brain become so frequently engaged, that the utmost vigilance on the part of the practitioner is required to prevent the occurrence of such mischief; yet it must not be lost sight of that the disease, even in its mildest form, is attended with danger: one case is recorded of sudden death during the spasmodic closure of the glottis; this occurred in a child who was otherwise in perfect health, and I have heard of several instances of the same kind. In every stage of the disease, therefore, we should be aware of and guard against the liability to sudden death; all needless sources of irritation should be avoided, and the child closely watched, and carefully held and supported during the paroxysm of dyspnœa. In irritable and passionate children the danger is increased. Dr. Johnson has stated to me, that he has seen a child, in a state of asphyxia caused by this disease, recovered from apparent death by the instantaneous application of artificial respiration."

In regard to the general design of the "Medico-Chirurgical Transactions," we think that the work may be made a very useful and interesting one. The wide field of selection which the nature of the enterprize affords, will secure to the editor every thing that can be expected from talents, experience, and observation. Every thing, therefore, depends upon his research and discrimination. Upon the general character of the selections, it is not easy to pass judgment, until we see the future numbers. A series of volumes of this kind should be made to give a complete view of the present state of medical science.

ART. VII.—*A Treatise on Neuralgic Diseases, dependent upon Irritation of the Spinal Marrow and Ganglia of the Sympathetic Nerve.* By THOMAS PRIDGIN TEALE, Member of the Royal College of Surgeons in London, of the Royal Medical Society of Edinburgh, Senior Surgeon to the Leeds Public Dispensary &c.—Philadelphia: E. L. Carey & A. Hart.—pp. 115.

The term neuralgia, once limited to express a certain painful affection of the nerves, has of late been applied to designate a genus, comprehending a great variety of morbid affections of the nerves, including those which are characterized by a perverted state of the functions, as well as by severe pain.

The diagnosis and treatment of these affections have been proverbially embarrassing. This difficulty, the author thinks, has, in no small degree, originated from a mistaken view of their pathology; they having been too frequently regarded as diseases of the nervous filaments, instead of being considered symptomatic of a morbid condition of the larger nervous masses from which these filaments are derived; and the treatment, in consequence, been directed rather to the symptom than the cause.

In the more severe forms of nervous disease, paralysis, for instance, we at once recognize the brain or spinal marrow, as the seat of morbid action; but in the slighter forms of disease of the brain or spinal marrow, we overlook their probable origin, and direct our attention to the perverted or impaired action of the nervous branches.

The same pathological principle, Dr. T. thinks, may be applied to the sympathetic system of nerves, and, although it may be difficult to establish this opinion by experiment, yet we are justified, by a well-grounded analogy, in regarding the ganglionic system, as bearing the same relation to the nerves which arise from it, as the cerebro-spinal system bears to the system of nerves arising from it; and hence, many nervous affections of the viscera are to be considered, not as diseases of these viscera, but as symptomatic of disease in those particular ganglia, from which their nerves are derived.

The following is the author's description of the symptoms of *Irritation of the Spinal Marrow.*

"The symptoms of this affection consist in an infinite variety of morbid function of the nerves of sensation and volition, which have their origin in the spinal marrow, and the parts in which these morbid functions are exhibited, of course, bear reference to the distribution of the spinal nerves.

The morbid states of sensation include every variety, from the slightest deviation from the healthy sensibility of any part, to the most painful neuralgic affections on the one hand, and to complete numbness or loss of feeling on the other; including pains which may be fixed or fugitive, or darting in the direction of the nerves, prickling and tingling sensations, a sense of creeping in the skin, of cold water trickling over it, and numerous other states of perverted sensation, of which words are inadequate to convey a description. In the muscular system we find weakness or loss of power, tremors, spasms or cramps, and sometimes a tendency to rigidity.

These symptoms sometimes exist in so slight a degree, that the patient considers them unworthy of notice, and only admits their existence when particular inquiry is made respecting them; the only complaint which he makes, being of an unaccountable sense of weakness and inability of exertion. In other cases the tremors have excited alarm; sometimes the neuralgic pain in the scalp, or the fixed pain in the muscles, particularly when it occurs in the intercostal muscles, have suggested the idea of serious disease in the brain or in the lungs; and when the pain is seated in the muscles of the abdomen, a fear that some organic disease of the abdominal viscera has taken place, harasses the mind of the patient. The muscular weakness, in some cases, tending to paralysis, often suggests the fear of apoplexy, or paralysis from cerebral disease.

The affection is often of very protracted duration, undergoing alternate variations from the sanative powers of the constitution, and the different exciting causes of disease. There are many individuals in whom the complaint has existed, in varying degrees of intensity, for a series of years, without its real nature having been suspected; the patients and their medical attendants having regarded it throughout as a rheumatic or a nervous affection. * * *

In this complaint, tenderness in the portion of the vertebral column, which corresponds to the origin of the affected nerves, is generally in a striking and unequivocal manner evinced by pressure. In some instances the tenderness is so great that even slight pressure can scarcely be borne, and will often cause pain to strike from the spine to the seat of spasm or neuralgia.

This affection of the spinal marrow occasionally exists throughout its whole extent; more frequently, however, it is confined to some particular portion, and occasionally is seated in different and remote portions at the same time; the particular symptoms, and the tenderness on pressure indicating the affected part.

The symptoms, of course, vary considerably, according to the particular part of the spine which is affected, and bear reference to the distribution of the different spinal nerves.

When the upper cervical portion of the spinal marrow is diseased, we frequently find neuralgic affections of the scalp; the pain strikes in various directions over the posterior and lateral parts of the head; sometimes the twigs in the neighborhood of the ear, sometimes those which ascend over the occiput to the superior part of the scalp, are more particularly the seat of the complaint; the nervous twigs distributed to the integuments of the neck, are occasionally affected, the pain darting across the neck to the edge of the lower jaw, and sometimes encroaching a little upon the face. These neuralgic diseases frequently assume an intermittent form, the paroxysms generally occurring in the evening. A stiff neck, or impaired action of the muscles moving the head, frequently attend the affection of the upper cervical portion of the spinal marrow; and occasionally the voice is completely lost or suffers alteration, and the act of speaking is attended with pain or difficulty.

Irritation of the lower cervicle portion of the spinal marrow gives rise to a morbid state of the nerves of the upper extremities, shoulders, and integuments at the upper part of the thorax. Pains are felt in various parts of the arm, shoulder, and breast; sometimes the pain takes the course of the anterior thoracic branches of the brachial plexus, occasionally the pain is fixed at some point near the clavicle scapula or shoulder-joint, at the insertion of the deltoid, or near the elbow, or shoots along the course of some of the cutaneous nerves.—Frequently one or both of the mammæ become exquisitely sensible and painful on pressure, and some degree of swelling occasionally takes place in the breast, attended with a knotty and irregular feel, when the neuralgic pains have existed a considerable time in that part.—Prickling and numbness, tingling and creeping sensations are often felt in the upper extremities; and also a sensation of cold water trickling over the surface. On rubbing the hand over the part affected, a soreness is frequently felt, which is described as not merely situated in the integuments, but also in the more deep-seated parts. In the muscular system are observed most frequently a weakness of the upper extremities, sometimes referred particularly to the wrists, tremors and unsteadiness of the hands; also cramps and spasms of various degrees of intensity. Occasionally there is an inability to perform complete extension of the elbows, the arm appearing restrained by the tendon of the biceps; pain and tightness being produced in this part, when extension is attempted beyond a certain point. As far as I have observed, the pains and other morbid feelings in the upper extremities and chest, are felt more frequently and more severely on the left than on the right side.

Females of sedentary habits appear particularly subject to these affections of the upper extremities, and it is not uncommon for them to complain of being scarcely able to feel the needle when it is held in their fingers, and that their needle or their work frequently drops from their hands.

When the upper dorsal portion is affected, in addition to various morbid sensations similar to those in the extremities, there is often a fixed pain in some part of the intercostal muscles, to which the name pleurodynia has been assigned; and when this pain has existed a long time, there is tenderness on pressing the part. When the lower dorsal half of the spinal marrow is the seat of this irritation, or subacute inflammation, the pleurodynia when it exists, is felt in the lower intercostal muscles; frequently there is also a sensation of a cord tied round the waist; an oppressive sense of tightness across the epigastrium and lower sternal region; and soreness along the cartilages of the lower ribs, or in the course of insertion of the diaphragm. Various pains, fixed and fugitive, are also felt in the parietes of the abdomen, throughout any part of the abdominal and lumbar muscles; the pain is frequently fixed in some portion of the rectus muscle, and not unfrequently in the oblique muscle or transversalis, a little above the crest of the ilium, particularly when the origin of two or three of the lowest dorsal nerves is diseased.

The affection of the lumbar and sacral portion of the spinal cord often produces a sensation of soreness in the scrotum and neighboring integuments, and the lower extremities become the seat of various morbid sensations, spasms, tremors, &c., for the most part resembling those which have been described as occurring in the upper limbs.—The patients also complain of a sense of insecurity or instability in walking; their knees totter, and feel scarcely able to support the weight of the body.

In some cases very considerable relief is found from recumbency, the pain frequently being diminished as soon as the patient retires to bed, independently of any paroxysmal remission."

This irritation, or subacute inflammation of the spinal marrow, is not necessarily connected with deformity of the spine, or disease of the vertebræ. They may, indeed, exist together, and inflammation and ulceration of the vertebræ, or intervertebral cartilages, may predispose to, and, in some instances, act as the exciting cause of an inflammatory state of the nervous trunk, which they contain; as the two affections frequently exist together. But, although they frequently exist at the same time, they bear no regular relation to each other. Curvature of the spine seems to have no connection with the disease under consideration, since they are so seldom found together, that the former cannot even be considered as an exciting cause of the latter; and, when they do occasionally co-exist, local treatment will relieve the nervous symptoms, while the curvature remains unaltered.

The treatment, recommended by Dr. T., is very simple.

Treatment—When the different neuralgic symptoms which have been enumerated, can be traced to this morbid state of some portion of the spinal marrow, the treatment that ought to be pursued, is readily decided upon. Local depletion by leeches or cupping, and counter irritation by blisters to the affected portion of the spine, are the principal remedies. A great number of cases will frequently yield to the single application of any of these means. Some cases, which have even existed several months, I have seen perfectly relieved by the single application of a blister to the spine, although the local pains have been ineffectually treated by a variety of remedies, for a great length of time. A repetition of the local depletion and blistering is, however, often necessary after the lapse of a few days, and sometimes is required at intervals for a considerable length of time. In a few very obstinate cases, issues of setons have been thought necessary; and where the disease has been very unyielding, a mild mercurial course has appeared beneficial. * * *

When my attention was first directed to this subject, I considered recumbency a necessary part of the treatment; it is, for a moderate length of time, undoubtedly beneficial, and frequently very much accelerates recovery; but subsequent observation has convinced me that it is by no means essential. I have seen several instances of the most severe forms of these complaints, occurring in the poorer classes of society, where continued recumbency was impracticable, which have, nevertheless, yielded without difficulty to the other means of the treatment, whilst the individuals were pursuing their laborious avocations."

The constitutional treatment varies with the complications of the disease, but very little more will be necessary than proper attention to the condition of the digestive organs. Where there exists a disposition to relapse, Dr. T. recommends a stimulating liniment to the spine, for some weeks after the other treatment is discontinued—generally using a liniment of one part of spirit of turpentine, and two of olive oil.

The author has given a number of cases, in illustration of his principles and mode of practice. The three first were cases of intermittent neuralgia of the scalp. In these, tenderness—in the first, second, third, or fourth, cervical vertebra was detected by pressure. They were all, except the last, relieved by applying a few leeches to the tender vertebræ. In the third case, after the leeches, a blister was applied, with the effect of relieving the symptoms very speedily. Dr. T. remarks, and

the remark, which we consider of some consequence, we are able to confirm by our own observation, that the pains in the head, which occur in fevers, will often be found to be of this neuralgic character, and altogether independent of any cerebral affection. A few leeches, applied to the nape of the neck, will generally produce immediate relief of this distressing symptom.

Case 4. Neuralgia of the upper extremities and thoracic parietes; fixed and constant pain in the neck, and between the shoulders, and darting pains from the cervical portion of the spine, over the occiput, and downward, across the neck, and over each shoulder; both arms affected with aching pains, and a sense of soreness on pressure; pricking sensations, numbness, and cramps in the forearms and fingers; occasional pain in the abdominal muscles, relieved by recumbency; no cough or difficulty of breathing. These complaints have been of long standing, and a great variety of remedies have been used for them, without benefit.

Pain having been found to exist in the two lower cervical and six upper dorsal vertebræ, leeches were directed, followed by a blister, and a recumbent position enjoined. In two weeks, the distressing symptoms were relieved, and the patient possessed a degree of muscular power, which she had not enjoyed for years. Slight occasional attacks since that period, have been relieved by the same means.

Case 5 we shall give in the author's words.

"Mrs. ——, æt. 48, but without having experienced any change in the catamenia, of a healthy appearance, and mother of a large family, had suffered about seven years from a painful affection of the left breast. On examination it was found to be exquisitely sensitive to the slightest touch; it was somewhat increased in size, and irregularly indurated, having a knotty feel, and an obscure sense of tumors, as if the glandular structure were enlarged at different parts. The integuments and cellular substance between the breast and clavicle, and towards the axilla, were thickened. There was a constant sense of uneasiness in the part, but her chief sufferings arose from its highly sensible state, which constantly exposed her to pain, from the irritation of her dress, or any accidental contact. Her spirits were depressed, and an apprehension that the disease would prove cancerous, although she was repeatedly assured of the contrary, was a source of

great anxiety. Leeches, evaporating lotions, and warm fomentations had been employed, and medical treatment had been particularly directed to the digestive organs; these means were occasionally productive of slight alleviation, but never of permanent benefit. The complaint varied in degree, being sometimes less severe for a few weeks, without any obvious cause for the temporary amendment.

Whilst in this state, (September, 1827,) she became subject to pains in the scalp, and vertigo, attended with flatulence. The symptoms directed my attention to the spine, which on examination was found to be tender in several parts. The most painful vertebræ were the second cervical, the seventh cervical, and two upper dorsal. Leeches were applied to these parts, with considerable relief to the pains in the scalp and vertigo. Since that time she has been occasionally in the habit of applying leeches, a blister, or a sinapism, of her own accord, when there has been any return of uneasiness in the head.

On making inquiry (August 10th, 1829,) respecting the complaint in the breast, of which I had not heard any mention for several months, she tells me that from the time of her commencing the treatment by local applications to the spine, the affection of the breast has disappeared. The pain and swelling are removed, and the breast resembles the other in every respect.

The circumstance of finding a portion of the spine tender, and the removal of the tenderness by suitable remedies, being unexpectedly accompanied with relief of the fullness and pain in the breast, could not fail to produce a powerful impression on my mind, and to excite a suspicion that this irritable affection of the breast was a neuralgia of that part dependent upon disease of the spinal marrow."

After detailing another very similar case, the author remarks that the description given by Astley Cooper, of the irritable breast, exactly coincides with the phenomena attendant on these neuralgic affections.

"When," says he, "the complaint affects the glandular structure of the breast, there is scarcely any perceptible swelling, but one or more of the lobes becomes exquisitely tender to the touch; and, if it be handled, the pain sometimes continues for several hours. The uneasy sensation is not confined to the breast alone, but it extends to the shoulder and axilla, to the inner side of the elbow, and to the fingers; it also affects that side of the body to the hip," &c. "Patients also state, that heat and cold frequently succeed each other in the breast, and it would seem that the pain resembles that in tic-douloureux, darting like electricity through the part, and through the neighboring nerves."

Cases 7 *and* 8 were neuralgiæ of the intercostal nerves of the abdominal parietes and lower extremities—the tenderness, in the one case, existing in the second and third dorsal, and in

the other, in the second and third lumbar vertebræ; relieved, as the rest, by leeches, blisters, recumbency, and a very mild constitutional treatment.

Case 9.—Neuralgia of the Knee.

"August 10th, 1829. E. B., æt. 18 years, a girl of a delicate constitution, and in a very humble station of life, is admitted a patient of the dispensary, on account of an affection of the left knee.

She complains of violent pain in the knee, principally situated about the ligament of the patella and in the popliteal space; from these parts the pain darts upwards along the outer side of the thigh towards the loins. It comes on suddenly for a few minutes and then leaves her free for a short time; towards afternoon the intervals of ease become shorter, until at last the pain is almost constant; during the evening it gradually diminishes, and before she retires to bed, in a great measure ceases. Whilst the pain is severe, there is considerable tumefaction of the knee, but no redness, and the skin is exquisitely sensible to the touch; in the absence of the paroxysms the swelling subsides, and the skin bears pressure without inconvenience. The pain is often accompanied with a feeling of numbness across the middle of the thigh. No affection of the right leg, or of the upper extremities. She has suffered severely during the last month, and since November, has had several attacks of a similar kind, lasting for a few weeks. The complaint was produced, she supposes, by working in a damp kitchen.

She appears in a delicate state of health in other respects, having a cough and some expectoration. The catamenia are regular. The appetite is deficient, and the bowels are relaxed and rather irritable.

She feels a great degree of aching and weariness in the lower part of the back, and the lower lumbar vertebræ are very tender on pressure."

Dr. T. would, by no means, insist that this treatment will be invariably successful, for medical science has not yet arrived at that degree of certainty, that the most correct diagnosis and the most judicious treatment will invariably succeed.

The next portion of the work is devoted to irritation of the Ganglia of the Sympathetic Nerve, from which we make the following extract:

"The ganglia of the sympathetic nerve appear subject to a state of disease similar to that which has been described in the preceding chapter, as occurring in the spinal marrow.

As the disease may be confined to one part of the spinal marrow, or may exist simultaneously in different portions, or may even pervade its whole extent, so the affection of the ganglia may be confined to one

of these nervous masses, may exist in several which are contiguous, or in ganglia remote from each other; and, as there is reason to believe, the whole chain may occasionally be affected.

The disease of the ganglia is seldom found, except in conjunction with that of the corresponding portion of the spinal marrow, whereas the spinal marrow is often affected without the neighboring ganglia being under the influence of disease. Thus we frequently find symptoms of disease in a portion of the spinal marrow, without any evidence of its existence in the corresponding ganglia, frequently the symptoms of both combined, and occasionally, but rarely, symptoms referable to the ganglia, without the spinal marrow being affected.

The principal symptoms resulting from irritation of the ganglia of the sympathetic, are to be found in those organs which derive their nerves from this source. They consist of perverted functions of these organs, and are exemplified by a variety of phenomena. The *involuntary muscles*, deriving their power from the sympathetic, have their action altered, as is evinced by spasms and irregularity in their contractions. The heart is seized with palpitations, the large vessels with inordinate pulsations; the muscular fibres connected with the bronchial apparatus are thrown into spasms, constituting a genuine asthma independent of bronchial inflammation. The muscular fibres of the stomach and intestines become the seat of spasm, and of various other deviations from their natural operations. The *sensibility* of the organs, which derive their sentient power from the great sympathetic, is variously perverted, the nervous filaments being the seat of pains. The heart and lungs, for instance, are subject to morbid sensations, bearing great analogy to those which have been designated "tic douloureux," when occurring in the spinal nerves. The stomach and intestines are liable to similar neuralgia, to which the names gastrodynia and enterodynia have been applied. The kidneys, the bladder, and the uterus, are liable to the same perverted state of their sensibility. The *secretions* also undergo alteration, products being formed, which in health have no existence. This is exemplified by the enormous secretions of air which sometimes occur in the stomach. Large quantities of clear transparent liquid are also secreted by this organ, constituting what is called pyrosis. The secretions of the stomach undergo variation in their qualities, rendering them unfit for the digestive process. It is probable that the secretion of the liver also experiences some alterations in these complaints. The urine is sometimes influenced, and I am inclined to suspect that some forms of diabetes partake of a neuralgic character. Leucorrhœa is frequently a concomitant of these diseases, and ceases on their removal; but I am not prepared to say that it is ever symptomatic of them. Irregularities in the catamenia are often observed, the discharge being generally in excess.

The ganglia most liable to the disease, are the middle and lower thoracic, from which the splanchnic nerves are derived, giving rise to various disorders of the stomach and digestive organs, which will hereafter be more fully discussed. Next in frequency is the affec-

tion of the cervical ganglia, producing painful and spasmodic states of the heart. The symptoms denoting disease of other ganglia, although occasionally met with, are less frequent in their occurrence. Irritability of temper and depression of spirits often attend these complaints, particularly when the stomach is the part which suffers.

The disease of the ganglia, like that of the spinal marrow, is not necessarily connected with disease of the vertebræ or distortion of the spine. It may coexist with these complaints, and when it does so, the symptoms proper to the ganglionic disease are often erroneously supposed to be produced by distortion, or by disease of the vertebræ; they are, however, frequently relieved by treatment, whilst the disease of the bones remains uninfluenced by it, and the most extreme distortion of the spine, or destruction of vertebræ from inflammation, may exist without there being any symptoms attributable to neuralgia of the sympathetic nerves.

In conjunction with the symptoms denoting disease of the ganglia, tenderness to a greater or less degree may generally be found on pressing some part of the spine, and the tender portion invariably corresponds with the symptoms; or rather, the seat of tenderness is near the part occupied by the particular ganglia from which the nerves of the disordered organ are derived; for example, when the heart is affected, the tenderness is found in some of the cervical vertebræ, and when the stomach is the seat of complaint, it is in some of the middle or dorsal vertebræ.

With respect to the treatment, I have but little to add to what has been said in the preceding chapter respecting the treatment of irritation of the spinal marrow. Leeches, cupping, blisters, &c., to the neighborhood of the affected ganglia, constitute the essential part.—Some internal remedies are useful as adjuvants or paliatives; as quinine, iron, and other tonics, when the violence of the complaint has been subdued, and an intermittent state still continues; digitalis and prussic acid, in palpitations and unnatural pulsations; prussic acid, bismuth, and opium in gastrodynia, pyrosis, and unnatural sensibility of the stomach; and opium in severe spasms or pains in the nerves. These remedies, however, are seldom necessary; and when alone relied upon, without any treatment being directed to the affected ganglia, often fail, even of giving temporary relief. Of still less efficacy, either temporary or permanent, are external remedies, as leeches or blisters, when applied to the region of the heart or stomach, if these organs are the seat of neuralgia. I have seen cases of nervous affections of the heart, (palpitations unattended with organic disease,) which for months had resisted the employment of digitalis, blisters to the chest, and various other remedies, yield immediately to the application of a blister over the cervical portion of the spine. Numerous instances of stomach complaints, which for a length of time had been an annoyance to myself as well as others, when treated by local remedies to the epigastrium, and by medicines called stomachic, have disappeared as if by magic, on the employment of leeches or a blister over the lower dorsal vertebræ."

To illustrate these affections of the sympathetic nerves, the author treats separately of neuralgia of the stomach, and of the heart.

Neuralgia of the heart generally comes on with palpitations, at first, occurring after exercise, or mental emotion, and soon subsiding. These paroxysms, as the disease advances, increase in frequency and violence, being excited on the slightest mental emotion, or change of position, until, at length, the irregular action of the heart scarcely ever subsides.

These palpitations are often attended by other symptoms, dependent upon the same ganglionic disease; dull, aching pains in the heart, lungs, occasionally in the aorta, or in the course of the carotid and subelarian arteries. Asthma is an occasional, though not a frequent attendant.

This affection of the ganglia is frequently attended with irritation of the spinal marrow, and hence the affections which have been just described, as symptomatic of that disease, are often present, and form a prominent feature in the description given, by the patient, of his disease. These nervous palpitations may be distinguished from those which arise from organic disease of the heart, by the absence of those symptoms which accompany a change of structure in that organ. In hypertrophy, the pulsations are more vehement and more uniform—in dilatation, they are felt over a greater extent of the chest—when there is obstruction to the circulation, from disease of the valves or other causes, the symptoms of imperfect oxygenation of the blood are present.

The nervous affection of the heart may exist in conjunction with organic disease, and under these circumstances, the symptoms will be very much palliated by remedies directed to the ganglionic system. Some have supposed that the nervous affections predispose to the organic diseases of this organ. Laennec states, however, that he has never met with any thing to countenance such a supposition.

Neuralgia of the Stomach. Various diseases are included under the term dyspepsia—Chronic gastritis, under which may be included all the varieties of chronic irritation, and inflammation

tion of this organ.—Simple indigestion, apparently from mere atony of the stomach, occurring during the convalescence from other diseases.

There are, however, numerous other cases of stomach complaints very much resembling these two diseases, but resisting most obstinately the remedies generally successful in removing or palliating them. Many of these cases, which Dr. T. had unsuccessfully treated for some time, he has found to be connected with tenderness of the spinal column, and has relieved by remedies adapted to that condition. From further observation, he was led to attribute these symptoms to irritation of the ganglia, from which the splanchnic nerves are derived, and the tenderness in the neighborhood of these ganglia confirms this supposition.

The principal symptoms denoting this condition, in addition to tenderness in the neighborhood of the middle and lower thoracic ganglia, are

1st. Indigestion, and the symptoms consequent upon it.

2d. Pain in the stomach, which, when the disease is of long standing, is increased by pressure; a sense of faintness, or what is usually denominated a sinking sensation at the stomach.

3. Flatulence, not arising, in the estimation of the author, from the decomposition of undigested aliment, but from a copious secretion of air, sometimes taking place instantaneously.—Pressure on the painful vetebræ causes, in some instances, a sudden extrication of the gas.

4. Pyrosis, sometimes accompanied with gastrodynia.

5. Pulsation of the epigastrium.

6. Affections of the spinal nerves, producing a corded sensation around the waist, constriction across the epigastrium, soreness along the edges of the ribs, sometimes increased on pressure, pains in the intercostal muscles, or the muscles of the abdomen.

"On reviewing these symptoms, it will be seen that some of them are common to gastritis as well as to the affection of the ganglia, and others are more particularly characteristic of the latter. Indigestion

and its consequences, as acidity, flatulence from decomposition, &c., may arise equally from disease affecting the surface, where digestion is performed, or from disease of the part where the nerves engaged in digestion originate. Pain in the epigastrium is common to both diseases, but in the nervous affection it is generally described as a dull, aching sensation; in gastritis the pain is more frequently accompanied with a feeling of heat, and is more particularly, though not always, increased by the ingestion of warm liquids. Tenderness on pressing the epigastrium more commonly attends chronic gastritis than the disease of the ganglia. The sensations of faintness and sinking seem common to both complaints. Flatulence from secretion, I believe, is seldom dependent upon gastritis, and is the most frequent of any symptom of the ganglionic affection. Pyrosis, I believe, is always attributable to the affection of the ganglia, and I think is never produced by inflammation of the mucous membrane of the stomach. The various affections of the spinal nerves, though not always attendant upon disease of the ganglia, are seldom absent, but they are never essential to, and but rarely accompany chronic gastritis; writers on dyspepsia, however, often confound these affections, and explain the spinal neuralgic symptoms on the vague principles of sympathy. In addition to these diagnostic marks, one peculiar to gastritis may be mentioned; this is the red, and sometimes prominent state of the papillæ of the tongue, particularly at its tip and edges; the tongue is also loaded, and a slight febrile state is more frequent in chronic inflammation of the stomach, than in the nervous affection.

From a careful consideration of the symptoms, it will not in most cases be difficult to establish a diagnosis, particularly when the suspicion of disease of the ganglia is corroborated by the circumstance of their being tenderness in the neighborhood of the splanchnic ganglia.

The affections which have been described, principally refer to the heart and stomach; other organs, however, I believe are occasionally affected from a similar cause; the lungs are the seat of painful and spasmodic affections, producing true asthma; the small and large intestines, the kidneys, the bladder, and uterus, are not unfrequently the seat of neuralgia, connected with tenderness in the spine, and remediable by means directed to the tender part."

Before proceeding to illustrate his principles by a report of cases, Dr. T. enters into a train of physiological and pathological observation, by which he arrives at the following conclusion; viz: That the muscular action of the heart, arteries, stomach, and intestines, depend upon the sympathetic system of nerves. 2. That the painful affections of the lungs, heart, stomach, and intestines, depend upon the same system of nerves. Lastly, that this same system of nerves, although it does not

control, exerts a very considerable influence over digestion. As the facts upon which these conclusions are formed, are already before the profession, it is not necessary for us to enter into the discussion of them.

Our limits do not permit us to enter further into the treatment of these affections, than simply to state, that it coincides with that already directed for irritation of the spinal marrow.

A considerable portion of this work is devoted to angina pectoris, a disease which the author attributes to the same source; viz, irritation or inflammation of the ganglia. With an extract representing his views upon this subject, we shall conclude our quotations from this work.

"I am fully convinced that it is to the nervous system we must look for the seat of this disease; but the great error, which has been committed by those who have assigned to angina pectoris a seat in the nerves, consists in their having overlooked the pathological fact, to which I formerly alluded, namely, that when any of the nervous masses, as the brain, spinal marrow, or ganglia, are the seat of disease, the morbid phenomena are not so much exhibited in the masses themselves as in the parts to which the nerves arising from them are distributed. Thus Laennec, whose views are by far the most definite of any that have been quoted, expressly states that he considers the seat of the disease to be in the pneumo-gastric nerve, or in the *filaments* of the great sympathetic, "dans les *filets* que le cœur recoit du grand sympatique." The treatment has also been conducted with reference to such pathological views; blisters, issues, and other remedies have been applied by the earlier writers to the neighborhood of the heart or stomach; most frequently, however, without much benefit; and Laennec has recommended magnetism, for which purpose he employed two strongly magnetized plates of steel, of a line in thickness, of an oval form, and slightly bent to the form of the chest; one of the plates he applied to the left præcordial region, the other to the opposite part of the back, so that the magnetic current might traverse *the affected part;* and when the magnet gave but little relief, he applied a blister under the *anterior* plate. Hence it is evident that his pathological and therapeutic views extended only to the nervous filaments; or, what amounts to the same thing, to the parts which were the immediate seat of pain, oppression, or morbid sensibility. On the contrary I think it would be much more consistent with actual facts, if we were to consider these local affections of the nerves merely as symptomatic of disease in the nervous masses from which they are derived; and to refer the morbid affections of the spinal nerves to disease in those portions of the spinal marrow whence they originate, and the morbid train of symptoms dependent upon the ganglionic nerves to the ganglia from which they are derived.

Upon this principle the constriction or oppression at the lower part of the thorax or epigastrium, the tightness around the waist, the pains in the lower intercostal and in the abdominal muscles, should be referred to disease of the lower dorsal portion of the spinal marrow.

The pain in the stomach, flatulence, pyrosis, &c., to disease of the lower thoracic ganglia of the sympathetic.

The pains, numbness, weakness, and the morbid sensations in the neck, breast, and upper extremities, to an affection of the cervical portion of the spinal marrow.

And the palpitations of the heart, and painful affections of the heart and lungs, to the cervical ganglia of the sympathetic.

On referring to the various cases of the angina pectoris which have been recorded, we find that the disease, in its simplest form, consists in the affection of the lower dorsal portion of the spinal marrow, attended with constriction and tightness across the epigastrium; to this is most frequently added an affection of the corresponding thoracic ganglia of the sympathetic from which the great splanchnic nerves are derived, producing distention, flatulence, and pain in the stomach; frequently there also exists an affection of the cervical portion of the spinal marrow, causing the pains, and other morbid sensations, in the neck, breast, and upper extremities, particularly on the left side, and perhaps occasionally dyspnœa from impaired action of the diaphragm; and not unfrequently there exists a similar affection of the cervical ganglia of the sympathetic, producing, in addition to the former symptoms, palpitations and painful affections of the heart and lungs.

This inflammatory affection of certain portions of the ganglionic system, and of the spinal marrow, is not unfrequently accompanied by various organic diseases of the heart itself, as ossification of the coronary arteries, of the valves, or of the aorta; softening, hypertrophy, or dilatation; producing, in addition to the symptoms peculiar to disease of the ganglia and spinal marrow, additional symptoms, peculiar to disease of the heart itself, as the more severe forms of palpitations, intermittent pulsations, obstructed circulation, and consequent lividity, anasarca, &c. From this combination we may easily comprehend why these affections so often prove suddenly fatal, and why organic diseases of the heart are so generally, though not universally, found on the dissection of those subjects who have died of angina, since the disease seldom proves fatal, unless accompanied with some organic disease of the heart. It is also possible, and even probable, that the disordered state of the nerves of the heart, from an affection of the cervical ganglia, may predispose to the organic changes in that organ which have been so frequently observed.

The paroxysmal exacerbations of the complaint depend upon undue accumulations of blood in the heart, which render it incapable of acting with sufficient energy to propel the blood with freedom, particularly when its muscular structure is in a state of atony, or atrophy, from ossification of the coronary arteries, fatty degenerescence or softening; or when there exists any obstruction at the different apertures. And it is not improbable that, when the nerves of the

heart are simply affected from disease of the ganglia and a consequent state of nervous palpitation without organic disease of the heart exists, that the muscular structure may be so weak and irritable as to be unable to act with that regularity and decision which is necessary for maintaining a regular and equable transmission of the blood. The causes which excite these paroxysms are such as accelerate the circulation or determine the blood more rapidly to the heart than it has the power of transmitting; as passions of the mind, exercise, and that state of the system which of late has been termed congestion, in which the blood ceases to circulate freely in the superficial parts of the body and in the extremities, and is accumulated in some of the internal organs; a state attended with coldness and pallor of the surface, and oppressed functions of those organs which are more particularly the seat of the congestion. From any of these causes blood may be accumulated in the heart and large vessels, and, when the muscular apparatus of this organ is impaired by any alteration of structure or by disease of its nerves, it may be unable, at least for a time, to restore an equable state of the circulation; a sense of anxiety, of pain, or of fulness in the region of the heart, and an impression that life is actually on the point of being suspended, is the result. In this state, after ineffectual efforts to propel its contents, the heart, as it were, feels its inability, and sometimes yields to a temporary paralysis or syncope, and, not unfrequently, its tone is so completely overpowered, that it remains for ever paralysed.

The earlier writers applied the term angina pectoris only to the more severe forms of the affection, from which arose the opinion that it was a disease of extreme danger. Daily observation, however, abundantly testifies that it may exist in every degree of violence, from the slightest sense of oppression and flatulence, to the inexpressible anxiety, constriction, and suffocation, which mark the more aggravated forms of the disease, particularly when they are combined with an organic affection of the heart. On this subject I am glad to find my views correspond with those of Laennec, who considers that in a slight degree it is a disease of very frequent occurrence.

I have been induced to refer the various groups of symptoms which have been described as angina pectoris, to an affection of some portion or portions of the spinal marrow, and of the corresponding ganglia of the sympathetic, by the following considerations.

1. The fact, as I have before observed, that most of the morbid phenomena exhibited in the extreme filaments of nerves, are seldom owing to disease in the nerves themselves, but to an affection of the nervous mass from which they are derived.

2. The coexistence of pain on pressing some portion of the spine, with the symptoms constituting angina pectoris; and the correspondence of the painful part of the spine with the particular symptoms which are present; namely, tenderness in the lower dorsal portion of the spine in conjunction with the stomach affection, constriction, &c., and tenderness in the cervical spine, with pains in the arms, breast, and shoulders, and palpitations.

3. The relief obtained by local antiphlogistic measures to the spine, for instance, to the lower dorsal portion when the stomach is affected, and there is constriction, and to the cervical portion when there is an affection of the arms and palpitations."

It is scarcely necessary for us to recommend the author's views to the attention of the profession, since the perplexity which our brethren have doubtless all experienced in the treatment of diseases of this nature, will at least induce them to grasp at every prospect of relief, however remote. In our last number, we gave an account of Dr. Tate's observations on Hysteria, to which he gives a similar location. In every case of this disease, which has since fallen under our observation, this tenderness has been found to exist, and very generally the disease has been found to yield to remedies directed by this view of its cause.—That the same practice will apply to a very great variety of nervous diseases, we have no doubt; and if others find the same benefit from it, that we have, some of the most distressing, and hitherto, obstinate diseases, to which the human frame is liable, will be found comparatively easy in their management.

F.

ART. VIII.—*Lectures on the Theory and Practice of Surgery.*—By JOHN ABERNETHY, F. R. S. &c. C. S. Francis, N. York: 1830. pp. 190.

In a former number of this Journal, a very full review of the surreptitious lectures of Mr. Abernethy were given. The publication of these lectures gave great annoyance to the author, from the impression that it was a gross invasion of his rights, and a serious injury to his reputation. Independent of the disadvantage to which every extemporaneous lecturer must appear, when his unguarded remarks, transcribed by a careless and perhaps not very competent stenographer, are subjected to the criticism which we are ready to apply to the works of so distinguished an author, those who have read the work to which

we refer, will recollect that Mr. A. was constantly in the habit of divesting himself of his professional dignity, and of placing himself before his students in an attitude which would add little to his reputation, in the estimation of those, whose approbation he would justly esteem the true criterion of merit.

It is, therefore, a matter of no surprise, that a sense of the injury inflicted by this unauthorized publication, should induce the author to use the following language, upon this occasion: "When the lectures of certain teachers, as of Boerhaave, Cullen, and Black, had acquired a high degree of celebrity, they were indeed surreptitiously published by persons who were naturally ashamed to acknowledge their acts; it has, therefore, been left to the present era to produce a character, in the editor of a periodical publication called the Lancet, so devoid of all good feeling and all sense of shame, as to avow and defend conduct so unprincipled."

The lectures were originally published in the Lancet, and Mr. A. having ineffectually attempted to arrest their publication by a legal process, and they being again reprinted both in Great Britain and this country, he conceived it necessary, in self defence, to offer to the world the book now before us.

The design of this work is limited to the doctrinal part of surgery, and to those principles of practice from which Mr. A. thinks, the principal interest of his lectures arose. It will contain, therefore, a very imperfect account of the lectures delivered by the author, since he has omitted almost all reference to anatomy and physiology. He has also, for the sake of brevity, avoided repeating any thing that may be found either in his works, or in those elementary treatises that are in the library of every practitioner. It is, in a word, designed to be simply a record of his own experience and observation; the remarks of others being only introduced, so far as may be necessary to enable him to present his own views in a regular system.

The example of Mr. Abernethy, in this respect, is worthy of all imitation, and may advantageously be put in comparison with that of some American physicians who have taken advantage of their popularity, repeatedly to sell new copy rights of the same

ideas, differently modelled, or presented under a new arrangement; and, what adds to the imposition, adapted to the same class of readers. Such authors, to use the idea of Dr. James Johnson, exhibit their learning by showing their familiarity, not with the writings of other authors, but with their own.

It has been remarked that it is impossible for a poet or a painter to produce more than one production perfectly original; the characters of every succeeding piece being modelled after the standard which the author had in view in the production of his maiden effort. To a certain extent, this remark applies to Mr. Abernethy's writings. In every part of them, we see the same principles extended to the various forms of disease, that come under his observation. Irritation and derangement of the digestive organs, are, with him, the box of Pandora. To urge the importance of soothing the one, and of correcting the other, is the great object of all his writings; and in every page, he illustrates the importance of these principles, by extending their application to some new form of disease. He every where manifests that peculiar tact, that mechanical genius, which is indispensable to the great surgeon, and in the improvements which his inventive genius has introduced into the practice of his profession, he has not been surpassed by any of his contemporaries.

The copious extracts which have been made from his surreptitious lectures, will serve us the necessity of making many from the present work. His remarks upon the treatment of oblique fractures of the thigh, will be read with interest.

"Having been instructed in the early part of my life to put up fractures of the lower extremity in what was called a relaxed position of the limb, I adhere to this practice from a conviction of its excellence. In the cases however, of oblique fractures of the leg in which the lower portion of the bone is retracted, and which require support from behind, it seems better that the limb should be laid over the double inclined plane, as has been already observed. To accomplish the object of keeping the lower extremity invariably under the circumstances described, namely, every longitudinal inch of the limb resting upon the plane opposite it—it is requisite that the trunk of the patient should be fixed on its side. To effect this, it is necessary that each anterior superior spine of the ilium and the acromion of either

scapula should be in the same perpendicular plane. When we lie down to sleep, and turn completely on our sides, in this position we wake without the slightest change. A person laid in this position for a certain time, makes a kind of cast in the bed in which he lies; and this subsequently supports him in the proper posture. A drawn sheet is to be put under the patient, and a sheet of strong pasteboard covered with a napkin may be slid under the buttocks, when the fæces are to be discharged, by which means they may be removed without soiling the bed-clothes. I have seen patients lie for three months in this position without material inconvenience. I have known individuals who have twice had their thighs broken, and who, treated the one time by being laid on the back with the limb resting on the double inclined plane, the other by being placed on the side, have given a decided preference to the latter position, although it happened that the union of the fracture was much more tardy on this than on the former occasion. The lateral position of the limb seems to me to be particularly advantageous in fractures of the neck of the thigh bone, where the base of the arch is separated from the shaft of the bone, as it keeps the broken bone steadily pressed against the part from which it has been detached. I have heard this position objected to, on account of its rendering it difficult to compare the length of the limbs with one another; which, however, may be done with as much accuracy as when a patient is laid upon his back. In the latter case we can never be assured that the limbs are equal, unless the two anterior superior spines of the ilium are in a horizontal line. If the two patellæ are then in a parallel line, it is evident that the limbs are of equal length. If a person lie on his back, with the anterior superior spines of the ilium in the same horizontal line, having the lower extremities extended and the foot straight forward, then will a line, drawn at a right angle with the former, from the centre of the patella, pass over the middle of the ankle joint, the dorsum of the foot, and that toe next the great toe. Under these circumstances, there can be neither abduction nor adduction, eversion nor inversion, of the thigh, and we are assured that the limb is straight. This observation can be made with equal certainty when a person lies upon his side; for if the two anterior superior spines of the ilium be in the same perpendicular line, and the patellæ correspond, we have an assurance that the limbs are of equal length. When a person has broken the neck of the thigh bone, and retraction has taken place, we may, by lightly rubbing the limb, and using gentle extension of the knee, gradually bring the thigh to its full length; yet it is apt to be retracted again, when these measures are discontinued, by the action of the irritable muscles. Permanent extension, in a degree adequate to counteract the action of the muscles, may in this case also be applied. A soft handkerchief may be wrapped round the knee, to which a cord may be attached and trained over a pulley screwed into the edge of the bedstead. A light weight, yet adequate to prevent such retraction, may be appended to this cord. In these fractures, as in others, the irritable state of the muscles is but of short duration;

and when the bones have rested for a short time in their proper situation and become agglutinated, the muscles will rather tend to maintain them in their proper position than to alter it."

The following remarks upon the reduction of dislocations, are so very important, and display so much of the peculiar surgical genius, which does this great man so much honor, that we cannot resist the temptation to introduce them.

"As the ligaments and capsules of joints are inelastic, so are they in cases of dislocation always sufficiently lacerated to admit of the bones being replaced in their proper situations, were not the attempt to do this opposed by the muscles. But the injury has put these active organs into a state of apparent alarm, and they most vigilantly and powerfully resist every attempt at motion of the dislocated bone, as if fearful of farther mischief being done. We are, therefore, under the necessity either of eluding their vigilance, or of overcoming their power. The former cannot in general be expected to succeed, although it may occasionally be accomplished. Should a surgeon be inclined to make the attempt, he proceeds in the following manner:— We shall suppose the case to be that in which the head of the os brachii is dislocated in the axilla, and rests just below the glenoid cavity of the scapula. Having seated the patient, bent the elbow, and turned the hand supine, the surgeon requests him to support the weight of the fore-arm with the other hand, telling him that he wishes to be assured of the exact nature of the accident before he proceeds to do any thing, and that the examination will be attended with no pain. The surgeon then grasps the elbow, applying his fingers and thumb to the opposite condyles of the os brachii, so as to command the motions of the bone, which he then moves gently forwards and backwards, and in a direction from and towards the patient's body. In attempting these motions he finds himself resisted by the muscles, and apprises the patient that this action deprives him of the power of examining, and that if the arm were but left perfectly at liberty, the exact nature of the accident would be speedily and satisfactorily ascertained. He inquires whether the motions he makes are productive of any pain; and when the patient finds that they are not, he will allow the surgeon to move the arm more freely than before. The surgeon now engages the patient upon some topic calculated to fix his attention by the interest it excites, for example, on the manner in which the accident occurred, and then suddenly, and when the patient is off his guard, moves the head of the bone in that direction which tends to replace it in its socket. An attempt to elude the vigilance of the muscles is more likely to succeed after previous unsuccessful efforts to reduce the dislocation have been made; for the patient is then fearless of the trivial motions which the surgeon feels obliged to practice, and the muscles are also weary and disposed to rest. I have known several instances in the course of my life of dislocations being

reduced in this manner, both before and after the ordinary methods had been tried without success."

Having failed to reduce the dislocation by art or force, the author recommends to weary out the muscles by slight but continued extension, kept up for a considerable time.

"Passing through the square of St, Bartholomew's Hospital one summer afternoon, when the weather was very warm, I observed a number of students standing at one of the doors wiping the perspiration from their faces, and panting from heat and exertion. They told me they had been trying for an hour to reduce a dislocated shoulder without avail, for the strength of the patient was immense. The man was a coal heaver, and his muscles were so bulky that they appeared to me to equal those of the Farnese Hercules; nevertheless he appeared to be nearly as much exhausted as his medical attendants.—Being unwilling to lose what appeared a very favourable opportunity for attempting reduction, I asked the patient if he would allow me, upon the following conditions, to try to replace the bone:—1st, That I should give him no pain; and, 2d, That the attempt should not be continued longer than ten minutes. He consented to my proposition with a smile. Having fixed the trunk of the body and lower costa of the scapula by means of a sheet, I applied a napkin above the condyles of the os brachii; and, having twisted it so as to fix it completely, gave the ends to two of the heaviest of the students present, telling them to be sure to prevent the napkin from becoming untwisted and slipping over the elbow joint; and having brought the ends of it close to their own bodies, to lean their weights upon them; for this force I knew they could continue unremittingly without fatigue. This being done, I inquired of the patient whether he was in any pain, the first condition being that he should suffer none. He having answered in the negative, I looked at my watch and said, "Now, sir, ten minutes are all I shall require;" and he smiled in derision, saying it would never answer. But before five minutes had elapsed he expressed himself in a very impatient tone, earnestly desiring that the effort, which he was sure would be unavailing, might be discontinued. I reminded him of our compact, showed him my watch, and told him the time would soon elapse. In two minutes more he declared very angrily that he would not endure it any longer, said he should faint, and at that moment the bone slipped into its socket."

We are not certain that this work will fulfill the design of the author, by superceding the one which gave him so much uneasiness; nor is it perhaps very desirable that it should. The present volume will be the companion of men of science; the other possesses attractions to the student, that will always make it popular to that class of readers. Nor are we disposed to judge ve-

ry censoriously, the burlesque mode of lecturing, which Mr. A. adopted with so much effect.

The most important, we would say almost the sole object of lecturing, is, to fix the attention of the pupil upon facts, which, in reading, he passes over with little interest; and although we would recommend to every professor to cultivate the higher arts of eloquence, yet these are so seldom met with, that gratitude is due even to the speaker who accomplishes the same object, by peculiarity of manner, or some humbler qualification.

F.

MISCELLANEOUS INTELLIGENCE.

ANALECTIC, ANALYTICAL, AND ORIGINAL.

I. ANALECTIC.

1. *Singular Trial for Infanticide.*—Mr. Beasse, a person of tolerable station on the Island of Guernsey, carried on an illicit intercourse with his servant, Sarah Elliott, the consequence of which was that she became pregnant. Early in the month of May he mentioned the latter circumstance to a friend, and confided to him his intention of having the girl sent across to the adjoining coast of France or to England, when the period of her delivery approached, in order to escape the scandal. On the night of the 10th of June following, her delivery took place in his house—prematurely, according to the statements of the girl herself, and of Mr. Beasse in his declaration—and in all probability at least unexpectedly, for he had a party of friends with him that evening till midnight, and when they left his house he accompanied them, and did not return home till half past one, although he knew she was unwell. Medical advice was not procured. The girl was delivered about four or five on the morning of the 11th, of a still-born child, as she represented; and in order to keep the affair quiet, and allow her to recruit her strength, she was locked up in her room, and a false story told of her having gone to visit a brother in the neighbourhood. It is particularly worthy of remark that among the steps taken to spread this story, the girl herself, within two hours after her delivery, went to the window of her room, and told her pretended intention to a boy in the garden about forty paces off. About the same time Mr. Beasse went to a friend, the same he had consulted formerly, to ask his advice what he should do; and at this person's recommendation, he allowed a surgeon to visit the girl at mid-day, who found her in bed with the after-birth not expelled, and who examined the body of the infant, without being able to observe any external mark of violence. Mr. Beasse likewise made inquiries as to the best mode of secretly burying the child, but no means could be devised that would satisfy him, by which it might be buried in the churchyard. Various circumstances having excited a suspicion of foul play, the house was visited on the morning of the 14th by a constable, with two medical men. Mr. Beasse admitted that a child had been born; stated that it had either been still-born, or at least when he was summoned

to the room by his servant, that he found it lying on the floor amidst a quantity of blood, and respiring feebly; and after several attempts at evasion he conducted the constable to a spot in the garden where he had buried it. The mother, when questioned on the subject, said she was only in her fifth month, that after she was taken in labour she went to bed and there fainted; and that she was ignorant of the sequel till she came to herself, and found the child on the floor dead. She also stated that baby-linen had been provided for the child; but neither she nor Mr. Beasse were able to prove this.

"Both Mr. Beasse and the servant were indicted for child-murder on the 23d of October last. The general evidence brought forward on the trial was nearly the same with what has just been detailed, with the addition of some of the usual contradictions in the declarations of the prisoners, which it appears unnecessary to enumerate. The medical evidence is very minutely reported, as delivered by Messrs. O'Brien and Hoskins, who examined the body, and Mr. Mauger, who visited the girl on the morning of her delivery. All of them agree that the child was not immature, but apparently born at the full time; and Mr. O'Brien adds, in confirmation of this opinion, that the state of the female prisoner on the 14th of June, four days after her delivery, corresponded with that of one who had brought forth a nine months' child. The data in support of these statements are not given, so that we cannot judge of their accuracy. But the opinion founded on the state of the woman is obviously overstretched: at least we question whether any experienced accoucheur would venture to say, from the state of the mother four days after her delivery, whether she had given birth to a seven, eight, or nine months' child.

"The body of the child was buried in a napkin, which was much besmeared with blood and meconium; and some florid blood was oozing from the mouth; but no other sign of violence was visible outwardly. On clearing away the blood from the inside of the mouth, the surgeons discovered a lacerated wound under the tongue, which separated the frænum linguæ a considerable distance backward.—The lower jaw being then detached from the face, the posterior lacerations were found, one on each side of the palate, extending backwards into the throat; the throat, beyond the lacerations was filled with blood, on removing which, a fourth laceration was discovered, wide enough to admit the fore finger, penetrating the upper and back part of the gullet, and laying bare the bodies of some of the upper vertebræ. The cellular tissue between the gullet and windpipe was ecchymosed or infiltered with blood along the whole course of the windpipe down to the root of the lungs. The lungs were high, expanded, and free from putrescence; their colour pale, pink, and mottled; they crepitated when handled, and when cut gave out air and a little blood, they were very buoyant in water, and when a portion was squeezed firmly, it expanded again and still floated. The heart was healthy. The umbilical cord was lacerated about three inches from the navel, and had not been tied. In the abdomen, blood was found besmearing the whole viscera. This proceeded from a wound in the rectum, en-

tering from within about two inches above the anus, passing about two inches more between the coats, and then piercing the peritoneal covering; and the course of the wound between the coats was marked by a line of ecchymosis. This wound appeared to have been made with a sharp instrument. The rectum contained scarcely any meconium; but the rest of the great intestines contained the usual quantity.

"From these facts, both of the medical gentlemen agree that the child was born alive and breathed, and that it had been put to death by means of some instrument introduced into the throat and also into the anus. They deny that it is possible to produce such injuries after death, even immediately after it; they maintain that, in the circumstances of the case, the hydrostatic test, together with the ecchymosis, in all the wounds, is certain proof of the child having been born alive; they are of the opinion that the wounds might occasion speedy death, but that on the whole the wound in the anus was not calculated to produce death with great rapidity, and that those in the throat, though attended with ultimate danger, could not prove immediately fatal except by the concurrence of suffocation, probably produced at the same time by the rude means employed. In particular, however, they express great doubts whether the woman could have inflicted these wounds herself immediately after delivery. In answer to a query as to this point, Dr. O'Brien says 'the word *possible* has so wide a range that I would beg leave not to answer it; but a person in the situation of Sarah Elliot, suffering both mentally and bodily, as she must then necessarily have done, weltering in her blood, and only in part delivered, I would almost say must be more than human to possess the strength of purpose and steadiness of hand necessary to perpetrate at that time the excesses committed on that child.' Mr. Mauger also thinks it almost impossible. Mr. Hoskins waived replying to the query, on the ground that he had not seen the woman before or after her delivery.

"In opposition to this evidence against the prisoner, Mr. Curtis, a surgeon, was examined on the opinions given by Messrs. O'Brien and Hoskins, and states that the child might have died of hæmorrhage from the untied umbilical cord—that it might breathe in the passages before delivery so as to expand the lungs as remarked by the inspectors; that he has known women resume their daily occupations on the very day of their delivery, and has no doubt that some are in such a state as to be able to kill their child—that if a woman, as in the prisoner Elliott's instance, is brought to bed at four or five in the morning, in two hours is able to go to her window and talk to a person forty paces off so as to be heard, and on the same day resumes her daily occupations, and washes her room, she would he able to destroy her child immediately after delivery—that he has actually met with instances of women who immediately after their delivery were so strong that they could have destroyed their children—that the wounds inflicted on the prisoner's child, required little force to inflict them—that ecchymosis may be produced on the dead body.

"Such was the evidence. Both prisoners were found guilty.—Mr. Beasse was found guilty as principal, and sentenced to death,

which sentence was subsequently put into execution; and Sarah Elliott, being found guilty as accessory, was sentenced to make the *amende honourable* before the Court, and then to six years' banishment from Guernsey.

"We have but a few remarks to add to this interesting narrative. It is clear the child was born alive. This is proved by the state of the lungs, with the ecchymosis and internal hæmorrhage, which, notwithstanding Mr. Curtis's opinion, could not have occurred after death. It is also clear that the child was put to a violent death, the wounds and hæmorrhage being sufficient to account for it, and such as put accidental death quite out of the question. The only difficulty in the case was, to fix on the actual murderer. One or other of the prisoners certainly was the murderer; for no one else was in the house at the time. But it is by no means so clear to our minds, as it seems to have been to the court, which of the two was the guilty person. Notwithstanding the opinion of Mr. O'Brien and Mr. Mauger, there cannot be a question among well-informed medical jurists, that the female prisoner might have killed the child herself immediately after delivery, as Mr. Curtis very correctly maintained. Such being the case we do not see any evidence to prove who was principal and who accessory; or rather—for the difficulty now stated would in *British* law be no impediment to inflicting the full pains of law on both as murderers—we see no satisfactory proof in the evidence, that there was an accessory at all, and no proof which of the two did the deed. If we suppose that either one or the other murdered the child, there is nothing in the conduct of the remaining party, or in the evidence generally, which might not be perfectly well explained on the principle that he or she acted with the view of keeping quiet what the murderer was endeavouring to pass off as the delivery of a still born child. We are of opinion, then, that the court acted hastily in executing the prisoner Beasse, and feel convinced that he would have escaped either in an English or Scotch court of Justice.—*Ed. Med. and Surg. Jour. April*, 1831.

2. *Can a woman, during the whole course of Utero-gestation, be ignorant that she is Pregnant?*—Most women, accused of infanticide, allege in their defence that they were ignorant of their being pregnant; and some writers on medical jurisprudence admitted its possibility in cases in which the woman has conceived during sleep, in a state of complete drunkenness, or finally in a disease which deprived them of their senses. The motions of the fœtus, however, and other signs of pregnancy must, in most cases, make the woman aware of her condition. M. Orfila nevertheless quotes many cases of married women who had previously had children, and who had no motive for concealing their pregnancy, who went on the full term of their gestation without ever suspecting their condition. Dr. Lozes has related in the *Archives Generales* for February last, the two following cases, which are confirmatory of the opinion of the learned medical jurist just alluded to. Under the head midwifery, Art. 53, p. 521, will be found

the opinion of Dr. Ellottson on this subject, and which coincides with that of M. M. Orfila and Lozes.

Case 1.—I was consulted, says M. Lozes, in the month of August, 1819, by a female to whom I had before rendered professional services, and who placed the most implicit confidence in me. This woman, taller than common, and of a very thin habit, had the abdomen very much swelled, so much so that she thought herself afflicted with abdominal dropsy. After having examined her with care, I told her that I believed her to be with child: to which she frankly replied that she did not think so, and for the following reasons:—She told me that she was forty-six years of age, that she had ceased to menstruate in her forty-second year, that she had entered the house of a bachelor as a housekeeper, that they had always lived in a connubial state, always adopting *precautions*, (these were her words,) but that for the four years past, when she ceased to menstruate, they thought it unnecessary to adopt these precautions: she also added that she did not experience any of the inconveniences observed by pregnant women, and that she never felt any movements in her abdomen. It is evident from what I have just related, that this woman spoke with frankness, and yet I thought proper to delay for a while prescribing the treatment suitable for the disease under which she believed herself to labour. About six weeks after I was called to this same woman, and brought her to bed of a well-formed child.

Case II.—In the month of October, 1824, being at Rheims, a physician of that city, Dr. Noel, requested me to go with him to visit a lady, who for twenty-four hours past had suffered from violent pains through the whole extent of the abdomen, and which had gone on increasing in spite of diet, semicupia, and emollient fomentations. Dr. N. told me that he believed the uterus to be affected; for, said he, during these six hours past, a sanguinolent sanies has been flowing from the vulva. On our arrival at the patient's, we found her seated, and only suffering from pain at intervals; she informed me that she was fifty-two years of age, that she had been married thirty years, and had her menses regularly until forty-five years old, and always enjoyed good health, but had never borne children.

As there flowed from the vulva, matters tinged with blood, M. Noel solicited the lady to permit me to make an examination, to which she consented, and I own that I was astonished to find the head of a child ready to pass the superior strait.

When I announced that the patient was about to be brought to bed, both she and her husband were not a little astonished; she, who had always been corpulent, assured me that the volume of her abdomen had not been enlarged, and that she had never felt any movements of the child. At all events, I determined, two hours after, to apply the forceps, and this lady was delivered of a living and well-formed child, which she suckled herself.

I ought to add in conclusion, that Dr. Noel had only seen this lady once, from the time in which she had been taken with the supposed colics. It was this which I believe led him into the error.

3. *Medical Statistics of the Royal Maternity Charity.*—During the year 1830, there were delivered in the Eastern District of the Royal Maternity Charity, under the superintendence of Dr. F. H. Ramsbottom,

2221 WOMEN, *of which cases*

27 were twins—about one in every 85 1-2 cases; of these, in 15 cases both heads presented; in 9 the presentation was a head and a breech; in 1, both were a breech; and in 1, a head and a shoulder.

1161 were males.

1086 were females.

2181 were presentations of some part of the head; of which

8 were face presentations—about one in every 273 cases.

59 were presentations of the breech, or some part of the lower extremities—about 1 in every 39 cases.

7 were presentations of the shoulder, or some part of the upper extremities—about 1 in every 321 cases; of these 1 was a second child of twins.

1 was terminated by the process called *spontaneous evolution;* and 1 was complicated, with an adherent placenta.

1 was an entire placentar presentation.

1 was a partial placentar presentation, in which as well as in the entire placentar presentation, it was necessary to deliver by *turning*, as the hæmorrhage did not abate on the membranes being ruptured.

7 were complicated with *dangerous* hæmorrhage before delivery; not the consequence of placentar presentations;—about 1 in every 317 cases. All these cases were delivered naturally, the hæmorrhage ceasing or greatly diminishing on the membranes being ruptured.

20 were complicated with an adherent or retained placenta, requiring removal by the introduction of the hand into the uterus—about 1 in every 111 cases. One of these cases was after a shoulder presentation, and two of them were under twins.

11 were complicated with *dangerous* hæmorrhage after the natural expulsion of the placenta—about 1 in every 202 cases.

1 was delivered by craniotomy, under hydrocephalus.

4 were delivered by the forceps; two by the long—two by the short: about 1 in every 555 cases.

4 were complicated with puerperal convulsions; three before delivery—one after; about 1 in every 555 cases. One of the patients was delivered by *turning*; the other cases terminated naturally.

1 case of apoplexy occurred twenty-four hours after delivery.

In 2 premature labour was induced in consequence of narrow pelvis; about one in 1110. Both the children were born dead. For one of these patients I had induced labour prematurely three times before; the other I had delivered by means of the long forceps twice previously.

1 fœtus was acephalous.
In 1 case there was what is termed a *secondary fœtus.*
14 women died—1 in every 158 1 2 cases.
2168 children were born alive.
79 were still-born—about one in every 28 1-2 cases.

Of the Deaths.

1 was on the fourth day after craniotomy had been performed, in consequence of the fœtal head being hydrocephalic. She died from inflammation of the pelvis, and commencing sphacelus in the vagina, induced by the pressure of the head during labour.

2 died from pulmonary disease; one on the sixth day after delivery, from confirmed phthisis; the other a fortnight after delivery, from pneumonia, which commenced towards the close of gestation, was checked for a time, but returned with increased violence after the birth of the child. This woman had a narrow pelvis; she had fourteen childen; on one occasion craniotomy had been performed; premature labour had been induced five times, four times by a gentleman now retired from practice, the last by my father and myself in February, 1829. Her labours had all been difficult, except when brought on prematurely. On this occasion premature labour came on spontaneously, a few days before the time when I had determined to induce it artificially.

1 from a sudden eruption of blood on the ninth day after delivery, under a placentar presentation. Every dangerous symptom had ceased: she appeared recovering favourably; I had discontinued my attendance, when I was summoned hastily, and on my arrival at the house I found her dead.

1 on the sixth day after delivery of twins. I did not see the patient till the day before she died; I was then told that the labour had been natural and easy, but a draining of blood had continued ever since: she was evidently sinking from the loss. On examining the body after death, I found a portion of the placenta attached to the uterus nearly the size of the palm of my hand. Improper attempts to remove the placenta had evidently been made by the midwife.

1 from a ruptured uterus; it was her fourth child; all the children had been born naturally, though dead; her labours had all been lingering, owing to diminished space in the conjugate diameter of the brim of the pelvis. When I saw her first, the membranes had ruptured fourteen hours, and during my absence the uterus ruptured itself. I immediately turned the child, but was obliged to perforate the head before I could extract it.—The rent was transverse in the anterior part of the cervix uteri, and sufficiently large to admit the hand readily into the cavity of the abdomen, into which the whole of the child, except the head, had escaped. She appeared to rally for a few hours; but

afterwards gradually sunk, and died on the fourth day after delivery.

1 on the fourth day after delivery by the long forceps: she was much exhausted when the operation was performed, and continued sinking till she died. Her pelvis was considerably smaller at the brim in its conjugate diameter than natural. This was her third child: under all her labours I delivered her by the same instrument.

2 from peritonitis; one on the fourth day, the other a fortnight after delivery. Both labours were natural and easy.

4 from the effects of adherent placentæ. One on the tenth day after delivery, of irritative fever: it was a first child; the labour had been very lingering; the placenta was firmly adherent throughout its whole extent, and removed with great difficulty. The whole was brought away, and there was a very small quantity of blood lost. One was on the ninth day: on the fourth day after delivery she was recovering well; she was afterwards suddenly taken ill, a neighbouring practitioner was sent for, and I did not hear of her again till I was informed of her death.—One on the sixteenth day: she sunk under constant and violent shivering fits, which continued from the third day after delivery till her death. There had been comparatively a small quantity of blood lost, but she was very much depressed by it. The other on the third day, with symptoms exactly such as would be produced by an over-dose of opium. I had ordered her ten minims of laudanum every four hours, and as she had only taken three doses, I at first suspected that the medicine had not been properly prepared. On comparing the remainder however, with another quantity made according to the same prescription, I could not detect the slightest difference in colour, taste, or smell.—Her death may be accounted for in two ways; either the system was peculiarly susceptible of the influence of opium, or, what is more likely, the stupor proceeded from the excessive loss of blood she had sustained; as we sometimes see convulsions the consequence of violent hæmorrhage. The comatose state continued for 15 or 16 hours, and it was with the greatest difficulty she could be roused even to put out her tongue. I never before met with a similar case.

1 of irritative fever, 17 days after the expulsion of putrid twins, at six months; one was expelled two days before the other. There was a slight hæmorrhage after the birth of the second. I removed the placentæ, which were both partly in the vagina, partly retained in utero by the closing of the os uteri upon them. This constriction, and the smallness of the uterine cavity, prevented the introduction of my hand, but both placentæ were extracted whole.

Of the Still-born Children.

25 were premature.

9 were putrid at full time, or nearly so.

9 were breech presentations at full time, or nearly so.
4 were shoulder presentations.
1 was under a placentar presentation.
1 was after the mother had suffered from accidental hæmorrhage before delivery.
3 were after the mothers had suffered from puerperal convulsions.
2 were delivered by the long forceps.
1 was hydrocephalic; delivered by craniotomy.
2 were after the induction of premature labour.
1 was under a ruptured uterus.
1 was acephalous.
With 6 the funis prolapsed by the side of the head, and could not be returned. In one of these cases the vagina was much constricted from sloughing after a former lingering labour; I was compelled to divide the stricture by a scalpel.
14 were at full time, head presenting; not putrid, nor delivered by art.

The number of deaths last year was greater than the average proportion in this charity; this may, perhaps, be accounted for in some degree by the prevalence of a puerperal epidemic of a very fatal character, which raged during the commencement of the year in the eastern and north eastern extremities and suburbs of the town. For, although not one of the patients of the Maternity Charity died of that specific disease, still, during its continuance they appeared to suffer more than usual from accidental occurrences, which at other times would probably pass without producing any serious consequences. I particularly remarked that they did not recover so readily after hæmorrhage as I am accustomed to see them, and I suspect that the same condition of the atmosphere which favoured the spreading of the epidemic—without exactly inducing the prevalent disease—predisposed all puerperal women to various unhealthy actions on the application of any exciting cause. —*Lon. Med. Gaz. March*, 1831.

4. *Are there certain Questions which a Medical Man in a Court of Justice may refuse to Answer?*—This is a very important question and one, the solution of which has often been demanded of us. It will appear from the following extracts which we make from a recent No. of the *London Medical Gazette*, that medical persons have *no privilege whatever*, not to disclose circumstances revealed to them professionally; and that the only communications privileged are those to their legal advisers entrusted with those communications as such. A leading case on the aubject is Wilson *v.* Rastall, 4 Ter. Rep. 754.

M. Cæsar Hawkins *examined by* Mr. Dunning. Q. Mr. Hawkins, are you acquainted with the lady at the bar? and how long have you been so?—A. A great many years: I believe about thirty.—Q. Are you acquainted with the present Lord Bristol: and how long have you been so?—I have had the honour of knowing the Earl of Bristol nearly as many years. Q. Do you know of any intercourse between my Lord B. and the lady at the bar?—A. Of an intercourse certainly: of acquaintance undoubtedly. Q. Do you know from the

parties of any marriage between them?—*Mr. Hawkins.* I do not know how far any thing that has come before me in a confidential trust in my profession should be disclosed, consistent with my professional honour. (The question and answer were here repeated.) *Mr. Dunning.* I trust your lordships will see nothing in my question that can betray confidential trust, or dishonour to Mr. Hawkins in giving it. My question is simply whether Mr. Hawkins knows from the parties of any marriage between them?—*Lord High Steward.* The question that was asked by the counsel at the bar is, "Whether the witness knew, from any information of either of the two parties, that they were married?" The witness objects to it, whether he is to answer any questions that are inconsistent with his professional honour. Your lordships are to determine whether the question put by the counsel at the bar shall be asked? *Lord Mansfield.* I suppose Mr. Hawkins means to demur to the question upon the ground that it came to his knowledge some way from his being employed as a surgeon for one or both of the parties; and I take for granted, if Mr. Hawkins understands that it is your lordships' opinion, that he has no privilege on that account to excuse himself from giving the answer, that then, under the authority of your lordships' judgment, he will submit to answer it. Therefore, to save your lordships the trouble of an adjournment, if no lord differs in opinion, but thinks that a surgeon has no privilege to avoid giving evidence in a court of justice, but is bound by the law of the land to do it, (if any of your lordships think he has such a privilege, it will be a matter to be debated elsewhere, but) if all your lordships acquiesce, Mr. Hawkins will understand that it is your judgment and opinion, that a surgeon has *no privilege*, when it is a material question, in a civil or criminal cause, to know whether parties were married, or whether a child was born, to say that his introduction to the parties was in the course of his profession, and in that way he came to the knowledge of it. I take for granted that if Mr. Hawkins understands that, it is a satisfaction to him, and a clear justification to all the world. If a surgeon was *voluntarily* to reveal these secrets, to be sure he would be guilty of a breach of honour, and of great indiscretion; but to give that information in a court of justice, which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever.

The question was then put once more, and answered directly by Mr. Hawkins.

And *Mr. Justice Buller*, in giving judgment in the case of Wilson *v.* Rastall, above alluded to, thus proceeds:—

"I take the distinction to be now well settled, that the privilege extends to those three enumerated cases, (counsel, solicitor, and attorney,) at all times; but that it is confined to these cases only. There are cases to which it is much to be lamented that the law of privilege is not extended; those in which medical persons are obliged to disclose the information which they acquire by attending in their professional characters. This question was very much considered in the Duchess of Kingston's case, where Mr. Cæsar Hawkins, who had at-

tended the Duchess as a medical person, made the objection himself, but was over-ruled, and compelled to give evidence against the prisoner."

5. *Mode of obtaining the active principle of the Elaterium.*—The great uncertainty of the elaterium as a purgative, probably dependent upon the varying qualities of the drug, renders it of some interest that its active principle should be obtained, so that the uncertainty in the administration of the article should be removed. JOHN D. MORRIES, Esq. has attained the active principle which he has named *Elaterine*, in the following manner.

Elaterium is to be digested for twenty four hours in distilled water at a temperature of about 200 deg. F. and filtered. The residual matter is to be acted upon by alcohol, s. g. 825; this tincture is to be evaporated to the consistence of thin oil, and while still warm, to be thrown into boiling distilled water; immediately a copious white crystalline precipitate forms, and increases in quantity as the liquor cools. This precipitate is the elaterine, and which is to be separated by decantation and filtration, and repeatedly washed with distilled water. In this state it is sufficiently pure for medical use; if it be required perfectly pure, it is only necessary to repeat the solution in alcohol and precipitation.

The elaterine is a white crystalline substance, of an extremely bitter and rather styptic taste, insoluble in water and the alkalies, soluble in alcohol, ether, and in hot olive oil, sparingly soluble in dilute acids. When in a state of purity, it forms microscopic rhombic prisms, striated on the sides, possessed of considerable lustre, and of a silky appearance when in mass. It is decomposed by the strong acids, forming with nitric a transparent yellowish gummy looking mass, and with sulphuric, a solution of a deep blood red colour. It is fusible at a temperature a little above that of boiling water, and at a higher temperature is dissipated in thick, whitish, pungent vapour, having rather an unpleasant odour.

In the department of materia medica will be found an account of the medical effects of this article.—*Edinburgh Medical and Surgical Journal, April*, 1831.

6. *Process for Economically preparing the Muriate of Morphia.*—Dr. WM. GREGORY, of Edinburgh, recommends the following process for the preparation of the muriate of morphia, without the use of alcohol, and by which this preparation of opium may be made cheaper than any now in use.

"Opium is cut in small pieces, and completely exhausted by cold water, or water at 90 deg. F. The aqueous infusion is concentrated till it occupies a small bulk, and precipitated by a slight excess of ammonia. The precipitate is collected on a filter, washed moderately with cold water, and dried at a temperature below 212 deg. When dry, it is reduced to powder, and rubbed up with cold water. Diluted muriatic acid is now added by degrees. The first portions are spee-

dily neutralized, but fresh acid is added until a slight but permanent excess is present. This dissolves both the morphia and narcotine, forming a dark brown solution, which must be filtered to separate it from some very dark matter which is left undissolved. The filtered solution is now evaporated to nearly the consistence of syrup, and on cooling, forms a brown mass of crystals moistened with a very dark liquid. The whole mass is now subjected to strong pressure between folds of bibulous paper, which absorbs the liquor containing the muriate of narcotine and colouring matter, and leaves the muriate of morphia tolerably pure, although still of a brownish colour. A second solution, crystallization, and expression, yields the salt nearly white and free from narcotine. By a third crystallization the muriate of morphia may be obtained in radiated bunches of silky crystals of snowy whiteness. These crystals, when dried by a moderate heat, become quite opaque. They are soluble to almost any extent in boiling water. Their solution has a very bitter taste, and yields, when supersaturated by ammonia, a highly crystalline precipitate of morphia.—A similarly pure solution of narcotine in muriatic acid gives a curdy precipitate not at all crystalline."

The quantity of muriate of morphine obtained from opium by the above process varies according to the quality of the drug. Dr. G. has however got as much as 17.5 per cent, but the quantity usually procured is about 10 per cent.

Dr. Christian and several other practitioners, who have used the muriate of morphia, consider its powers to be equal to that of any other of the preparations of morphia. It is given in solution, five grains of the salt dissolved in one ounce of warm water, of which twenty-one drops, equal to one fourth of a grain of the salt, is the medium dose.—*Edinburgh Med. and Surg. Journal, April*, 1831.

7. *Fracture of the edge of the Acetabulum.*—Dr. M'Tyer has given in the *Glasgow Medical Journal* for February last, some interesting particulars respecting four cases of fracture of the edge of the acetabulum, an injury of which little notice is taken by any surgical writer, and yet it would seem not to be of exceedingly rare occurrence since three of these cases occurred within little more than twelve months in the Glasgow Royal Infirmary. In the first case, a fracture was found to pass through the bottom of the right acetabulum, from below, upwards, and forwards, while a wedge-shaped piece of bone about an inch and a half long, was separated from the upper and posterior margin of the cotyloid cavity. When the muscles were removed by dissection, this portion of bone was held in place by the capsular ligament and a few fibrous bands at its superior margin, which here formed a kind of hinge. When the head of the femur was brought into its normal situation in the acetabulum, the separated portion of the margin of the acetabulum fell into its proper place. The capsular ligament was lacerated at the lower and posterior part, the triangular ligament was also separated from the bottom of the acetabulum, and there was no resistance offered to the head of the femur raising the

detached portion of bone, passing under it, and then gliding on to the dorsum of the ilium, which situation, while the patient was alive, it always assumed, when the thigh was left to the uncontrolled action of the muscles attached to it.

The second case differed from the first, only in this, that the portion of the margin of the acetabulum which was separated, was chiefly from the upper part.

The third case differed from the two former in the situation of the fracture, and there was some dissimilarity in the position of the limb of the affected side, from that of the two other cases. In this example, as in the first, a fracture passed through the bottom of the acetabulum, but here it was nearly transverse. From that part of the acetabulum opposite the ischiatic notch, a thick, somewhat triangular-shaped piece of bone was separated, removing an inch and a half of its margin; another portion, containing about half an inch of the brim of the acetabulum, was also removed, a little lower than the former, and this adhered to the extremity of that portion of the cotyloid ligament from which the largest piece of detached bone had been entirely separated. The head of the femur was lodged over the ischiatic notch on the pyriformis muscle; the largest portion of bone separated from the ilium was pushed towards the coccyx, whilst the head of the femur had passed under the smaller portion. The capsular ligament was a good deal lacerated at the posterior part; but the anterior, which is much stronger and fibrous, remained entire, and the round ligament was torn across near the bottom of the acetabulum.

The fourth case occurred in a male subject dissected at La Pitie. Nothing unnatural was observed in the position of the limb to indicate that any disease had existed, and it was only when dissecting the pelvis, that more than usual roughness and prominence were observed, occupying the upper half of the posterior margin of the acetabulum; this was at first supposed to be an exotosis of that portion of the ilium, but on more minute examination, Dr. M'T. found it to arise from a portion of bone which had been separated and united with a slight deviation from its natural position; the round ligament was entire, and as the capsular ligament had been in great part removed before Dr. M'T. saw it, he could not ascertain if it presented any appearances to indicate that laceration had at one time been present.

The first case was that of a labourer, aged twenty-seven, on whose back a number of bricks had fallen, while he had his right knee placed on the back of a trench. There was much tense and painful swelling of the right buttock, the right leg was shortened about an inch and a half, bent, and the *toe turned a little outwards*. The limb could be moved without much difficulty, but every motion gave him pain.—When rotated, the trochanter revolved, or seemed to revolve, upon a shorter radius than usual, and a crepitus was distinctly felt when the hand was placed over it. He had also pain in the groin and in the lower part of the abdomen. The pulse was small and the skin cold. On fixing the pelvis, and making extension, the limb could easily be brought to the same length with the opposite, and the deformity at the

hip in a great measure disappeared, but the least relaxation immediately reproduced the retraction, and the rounded form of the hip.

In the second case the limb was shorter than the opposite; the knee slightly bent, and turned forwards and inwards, and the toe rested on the tarsus of the opposite foot. The trochanter major was less prominent than natural, and more approximated towards the anterior spinous process of the ilium; there was less flattening of the hip than is generally observed in dislocation. Crepitus was heard, when the limb was not extended.

In the third case the appearance of the limb differed from the first and second, in this, that hardly any shortening was observed, but the toes were stretched downwards, and turned slightly inwards. It was immediately supposed to be a dislocation of the femur; but on attempting to move the limb, very distinct crepitus was heard, and though a good deal of force was used in pulling, we could make but little change in the position of the head of the bone, probably from the rigidity of the muscles, occurring after death.

In the fourth case, it is not known whether any particular symptoms accompanied it when produced; it is not even certain that the head of the bone had been displaced, for the round ligament was found entire; if there was displacement, the head of the femur would have rested on the dorsum of the ilium, and might, in all probability have been mistaken for a fracture of the neck of the femur.

These fractures of the acetabulum, it is evident, may, on even a pretty accurate examination, be mistaken for a fracture of the neck of the femur, or a dislocation, and though there is no symptom which by itself will indicate either of these injuries, yet a combination of symptoms will pretty clearly point out the one from the other.

From the appearances which the cases presented previous to dissection, a different injury from the true one was suspected. The first case was taken for a fracture of the neck of the femur, and the symptoms differed in no respect from those set down by writers on the subject. There was the diminished length of the limb—the crepitus on rotation—the facility of extension and reduction. The only symptom which rendered the case doubtful was the ultimate turning inwards of the toes, and even that has been given as a symptom usually accompanying fracture of the neck of the femur by Pare, Petit, and B. Bell. Desault has also mentioned cases which he says were cured without any shortening of the limb, where this symptom was present; and it is not denied by any writer that it may occasionally occur. The second case was in like manner mistaken, and the third was supposed to be a dislocation, from the appearances which the subject presented, though the crepitus rendered this doubtful. The limb was slightly shortened, and the toes turned downwards and inwards, and the limb could not be drawn into its natural position. It would probably have been different had the patient been alive, for this immobility in all probability arose from rigidity of the muscles occurring after death.

That combination of symptoms which indicates fractures of the edge of the acetabulum with displacement of the femur, of which all are

not present either in fracture of the neck of the femur, or dislocation of the femur on the dorsum of the ilium or ischiatic notch, is the following:

The limb of the injured side assumes the position of one of the two dislocations mentioned. There is a crepitus previous to extension being made. The reduction of the limb to its natural position is easy, but there is difficulty in retaining it there. If firm pressure is applied over the buttock after extension has been made, no crepitus is observed. There is less flattening of the buttock than in dislocation.—There is increased mobility of the limb after extension, and the pain experienced on rotation of the limb being made after reduction, is less than it was before that. They differ from dislocations without fracture of the acetabulum, therefore, in the presence of crepitus—in the facility of reduction and the immediate return of the femur to its unnatural position, when left to the uninterrupted action of its own muscles.—They differ from fracture of the neck of the femur, in the position of the limb, the toes being turned inwards, and in the presence of crepitus before extension has been made.

Dr. M'T. is of opinion that in some of those cases of reported cure of fracture of the neck of the femur within the capsule, where no autopsy was obtained, and especially such as presented amongst the symptoms the toes turned inwards, there was probably fracture of the edge of the acetabulum, while the femur was entire.

8. *Fracture of the body of the Scapula.*—James Syme, Esq., relates in the *Edinburgh Medical and Surgical Journal* for April last, a case of this rare accident. It occurred in a man aged forty-five, who, whilst carrying a heavy stone in a handbarrow, across the sunk area of a house, the wooden gangway broke, and he was precipitated to the bottom. He fell first, and the stone struck him on the back. The lower portion of the scapula was drawn upwards, and projected by the action of the *teretes* muscles, together with the *latissimus dorsi*.—Mr. S. put a cushion of tow under the axilla, another over the lower part of the scapula, and then applied a spica bandage, under which treatment the patient felt quite easy, and was dismissed free from uneasiness or deformity in three weeks.

9. *Dislocation of the Sacro-iliac Symphysis.*—An interesting case of this rare accident is related by T. E. Baker, Esq., in the fourth volume of the *Transactions of the Medical and Physical Society of Calcutta.* The subject of the case was a lieutenant of cavalry, a muscular man, aged thirty-six. While on parade his horse stumbled and fell; the rider "was thrown forward over the horse's head, and was on his knees and hands, when the horse, in recovering his fall, again fell, struck him on the perinæum with his head, and came with the whole weight of his body upon the left hip; to use his own words, 'the horse appeared to drive him into the ground, he heard the bones make a noise like the rattling of a bag of pebbles, and he thought his bowels were driven out in front; he found he could not stand, and when

being placed in the *dooly*, the bones made a snap, and gave him great pain.'

"When placed on his right side, a slight projection was perceptible at the posterior and superior spine of the left ilium; but when lying on his face, the projection was not perceptible, nor was there any pain on pressing the part, nor any appearance of fracture. On turning him again on his right side, pressing on the hip joint, and bending the thigh towards the abdomen, the bones of the pelvis made a harsh grating noise, and the motion gave great pain. On being turned on his back he was easy except a slight pain at the sacro-iliac symphysis.

"At 11 A. M. he was bled to about 24 ounces, when he nearly fainted; his bowels had been opened early in the morning, and he made water only a few minutes before the accident occurred; his pulse was natural, and 76; he had great pain in the urethra in passing his urine, which was tinged with blood; in the afternoon he complained of pain in the scrotum, in the left groin, and over the pubes, to which thirty leeches were applied; in the evening he complained of pain, and numbness in the left groin and thigh, to which warm fomentations were applied; he took light nourishment during the day, was in good spirits, and wrote a note to his brother and myself. We applied a linen roller round the body, made a hole in the bed and bedding, and contrived a sort of leather funnel, so that he should have no occasion to move when the bowels were relieved.

"18th.—Passed a tolerable night, having slept several hours; complains of great pain in making water, which is still tinged with blood; he once heard the bones crepitate when moving unconsciously, but it did not give him much pain; pulse 74 and natural, tongue clean, and moist; has pain higher up in front of the abdomen; above the pubes; bowels not being moved, he took a table-spoonful of castor oil, which having no effect, was repeated at 2 P. M.; applied a soft leather belt around the body instead of the linen roller, but he cannot bear the lower straps to be tightened, as the pressure gives him pain above the pubes.

"19th.—Was restless during the night, and is much worse this morning, has vomited several times, and is much distressed with hiccough; the urine dribbles away guttatim and gives him much pain. Effusion has taken place into the scrotum and perinæum, but to no great extent. We tried to pass the catheter, but could not succeed, either from the urethra being ruptured, or from a stricture of some years' standing; pulse 130, weak and low; cold perspirations on the forehead; has had several loose stools. The hiccough is much relieved by taking ether with camphor mixture, which he says he finds very refreshing.

"20th.—Was very restless in the early part of the night; had two stools; passes more urine and with much less pain; hands quite cold; pulse 145 and very weak; the effusion into the scrotum does not increase, and it has assumed a livid appearance; tongue is clean and moist, but he complains of being very thirsty; has been reading during the morning, is quite sensible, and free from pain, and can scarce-

ly believe that he is in great danger, though he is evidently and rapidly sinking; since the morning the whole of the abdomen is swollen very much, and appears to be distended with air: he is continually dozing, but being unable to obtain sound sleep, at 10 P. M. I gave him, at his own request, thirty drops of laudanum, but he rejected it almost immediately. The hiccough still continued, but he remained free from pain, and died at 2 A. M. the following morning, (the 21st.)

"The body was examined ten hours after death; the cavity of the abdomen and its contents had a livid, purplish appearance, as if blood had been extravasated through the whole extent of the peritoneum; it contained about six ounces of blood, on which a small quantity of oil floated; the stomach exhibited effused blood on its external surface, and several clots were observed on its inner membrane. The liver had numerous and firm adhesions to the diaphragm; there was dark discoloration on its right lobe, and on raising it, a quantity of thick, florid, coagulated blood was found underneath. The intestines were much distended with air, and in several places had the appearance of being bruised; there was a very small opening in the colon less than the size of a pea; we were not certain whether it was ruptured, or whether it was caused by the knife; when the intestines had been exposed to the air for about half an hour, they turned of a greenish hue; on removing them, and detaching the psoas and iliac muscles from the os innominatum, on which there was much effused blood, a total separation of the ilium from the sacrum was discovered, at the sacro-iliac symphysis, and a small transverse fracture of the ilium, nearly two inches in length. On cutting through the recti muscles over the pubes, about an ounce of brown coloured fluid escaped, of a urinous smell. The ossa pubes were disjointed at the symphysis, the cartilage was torn from the bone on the left side, leaving the surface rough, and there was a space of about half an inch between them. The bladder contained a small quantity of urine, and its external and internal surface had a dull red appearance. The urethra was ruptured, just before its passage through the triangular ligament, and some urine had escaped into the adjacent cellular membrane; the stricture was about six inches from the orifice of the urethra.

"From the very great injury the parts had sustained, it may appear surprising that the patient suffered so little pain; for, excepting when passing his urine, he was quite easy."

A case of this variety of dislocation is related in the memoirs of the Academy of Dijon; and another, which occurred to Dr. Harris, will be found in the fourteenth volume of the Philadelphia Journal of the Medical and Physical Sciences.—*American Journal of the Medical Sciences.*

10. *Perforation of the Membrana Tympani.*—It has been believed that in certain cases of deafness, advantage has been obtained from perforating the membrana tympani, but as the wound almost always soon heals, the benefit has been but temporary; and some ill consequences have sometimes resulted from the inflammation which fol-

lows the operation. Dr. SOLERA, in a communication published in the *Annali Universali di Med.* for Jan. last, states that he is satisfied that these ill consequences are rather attributable to imperfection of the mode of operating, than to the operation itself, and he recommends it to be performed by introducing a piece of gum elastic catheter into the external meatus down to the tympanum, and through this, to pass a probe armed with caustic potash. When the potash touches the tympanum, a rotatory motion is to be given to it. The loss of substance thus occasioned, prevents the future obliteration of the opening.—*Ib.*

11. *Wounds of the Throat.*—Baron LARREY, in his *Clinique Chirurgicale*, relates some interesting cases of this description: we give the following abstract of them from our esteemed cotemporary, the *Medico Chirurgical Review.*

CASE I.—M. Arighi, (now Duke of Padua, and then aid-de-camp to General Berthier,) received a musket ball in his neck at the siege of Acre, by which the external carotid artery was cut across, near to the place where it is given off from the internal, and as it enters the parotid gland. The gush of blood from both apertures of the wound attracted the attention of the artillerymen, and one of them instantly pushed a finger into each opening, and thus arrested the flow of blood. Baron Larrey was immediately called amidst a shower of shot and shells. He applied pressure and maintained it carefully for some days, by which means, and without any ligature, life was preserved, and all hæmorrhage prevented.

CASE II.—After the battle of Waterloo, the baron had an opportunity of seeing a young English soldier who had the left external carotid artery *partially* opened. The hæmorrhage was alarming; but the English surgeon cut down on the aperture, and tied the artery both below and above the wound. The patient entirely recovered.

CASE III.—Henry Cabon, of the Swiss Guard, was brought into the Hospital de la Garde, on the 21st of November, 1828, immediately after receiving a sabre-wound, while fighting a duel, in the upper part and right side of the neck. When the baron arrived, the man was nearly dead from hæmorrhage and suffocation. The wound was laid bare, while an assistant made pressure on the line of the artery, and then the baron enlarged the orifice, and discovered that the superior thyroid artery was wounded, as also the external carotid itself. A cellular pouch had formed behind the thyroid gland, (which was goitrous,) filled with clotted blood, and which was pressing on the trachea. The removal of these clots was followed by a jet of arterial blood.—

The baron was unable to seize the vessels from which the blood issued, and therefore laid bare the trunk of the common carotid, and passed a ligature around it. He was not a little surprised to find this artery no larger than the radial artery at the wrist. This was attributable to the great loss of blood. The great source of hæmorrhage was thus cut off; but some vessel still continued to supply blood at the upper part of the wound. This vessel was fortunately seized by

the forceps and secured. The wound was then cleaned and dressed, the breathing continued difficult, and the lips deadly pale. For two or three days it was doubtful whether this man would rally, but eventually he recovered.

Case IV.—A grenadier of the army of Egypt was wounded by a bayonet, the broken point of which remained, for six weeks, deep in the side of the pharynx, behind the arch of the palate. The man had entirely lost his voice. The baron, with great difficulty, seized the foreign body and extracted it. The voice was instantly restored.—The iron had pressed on the laryngeal branch of the par vagum.

Case V.—A subaltern officer of the guards was brought into the hospital on the 7th of June, 1824, presenting a wound in the neck, on the right of the larynx, so small as to be scarcely perceptible. There was great ecchymosis and tumefaction of the whole anterior region of the neck, with deep-seated pain in the chest. Voice and speech were gone—the respiration exceedingly difficult, as well as deglutition. He informed Baron Larrey, by writing, that this wound was made by a small sword. Venesection was repeatedly employed, together with cupping and leechings, which gave some relief. On the sixth day, however, he was menaced with suffocation, and his face was blue and bloated. The baron found him apparently in the agonies of death.—In this crisis he determined on tracheotomy. He made an incision through the integuments of some length, and then perforated the space between the thyroid and cricoid cartilages. An immense explosion of air was the immediate consequence, together with the expulsion of several clots of blood. Respiration succeeded, and considerable relief was the result. A paroxysm of suffocation, however, soon after occurred, owing to the obstruction of the orifice in the air-passage, and a tube was quickly inserted. Relief was again obtained; but thirst was intolerable, and the unhappy patient was unable to swallow. In this dilemma, a tube was with great difficulty passed into the stomach, and fluids introduced into that organ. The thirst was moderated, but he could not bear the presence of the hollow bougie, and tore it out himself. He lingered in dreadful agony, till 4 o'clock the next morning, when he expired.

On dissection, an abscess was found in front of the three superior cervical vertebræ, (which were denuded,) the size of a hen's egg, and which had pressed so much the parietes of the pharynx against the cricoid cartilage and upper part of the trachea, that respiration could not be carried on through the aperture that was made by the knife. A purulent infiltration had also penetrated down into the chest through the cellular membrane.

The baron, in his remarks on this case, does not allude to the possibility of life being saved, if the opening had been made lower down in the trachea, instead of the place which he pitched on for the operation. In all cases where tracheotomy is deemed necessary, the lower down the operation is performed, the more difficult it is—but the greater is the chance of success, for the obvious reason that we are thus more likely to get below the obstruction.

Case VI.—General Murat, (afterwards king of Naples,) received at the battle of Aboukir, a musket-shot, which traversed the neck from side to side, wounded the root of the tongue, and carried away a portion of the epiglottis. The baron was on the spot, and rendered immediate assistance. The first phenomenon which he observed, was the discharge of the dismembered portion of the epiglottis, followed by a considerable expectoration of frothy blood. The general was harassed for some days with painful cough, loss of voice, &c. The baron cleared the orifices of the wound both at its entrance and exit, and then introduced an elastic tube in the œsophagus, for the purpose of introducing liquid nourishment and drink into the stomach. This was necessary, as there was no proper valve to prevent the ingress of substances into the trachea. In the course of eighteen days, however, the parts had so accommodated themselves to the loss of a portion of the epiglottis, that this officer was able to swallow with little or no inconvenience.

Case VII.—In this case, which was that of a soldier in Egypt, who was wounded by a musket-ball on the 21st of March, 1801, the whole of the epiglottis was carried away. The poor fellow was devoured by thirst, but could not drink, and harassed with incessant cough. In this dreadful state he continued four days, without any relief. When Baron Larrey saw him, he was in the most piteous and dangerous condition. The baron was enabled to pass a gum-elastic tube down the œsophagus, and through this to introduce liquids into the stomach. By a long and assiduous perseverance in this measure, the life of the soldier was saved, and nature supplied the place of the epiglottis by a contrivance of her own.—*Ib.*

12. *Trachcotomy.*—The expediency of opening the trachea in those instances in which a foreign body is lodged in one of the bronchial tubes, does not appear to be as yet entirely decided by surgeons. To aid in settling this interesting question, we have been careful to lay before our readers from time to time, such cases as appeared to throw any light upon the subject. An interesting memoir has been recently read to the Dublin Chirurgical Society, by John Brown, M. D. and which, consisting principally of an analysis of cases, does not admit of condensation within the limits to which we are here restricted, and we must therefore content ourselves with the conclusions he has drawn from them, and which appear to us to be legitimate inferences.

"1. That the existence of foreign bodies in one or other *bronchus* can be ascertained by the use of the stethoscope; by the seat of the pain and other uneasy sensations; and by the previous history of the case.

"2. That since the effect of such bodies in these unnatural situations, is to excite inflammation and abscess, most commonly ending, sooner or later, in death, it is incumbent on us to attempt their extraction with the least possible delay.

"3. That small round bodies move freely from the *bronchi* to the trachea, particularly when an opening has been made in the latter, and that the best mode of promoting their expulsion is by such an operation.

"4. That when sharp and angular substances have descended into either *bronchus*, they generally become fixed there, but may be extracted by forceps or other suitable instruments passed through an artificial opening in the trachea.

"5. That the sooner such an operation is undertaken, the greater will be the chances of success, as the presence of the extraneous substance must give rise to congestion and inflammation in the lungs, and to various cerebral affections, all depending on mechanical interruption to the natural course of the circulation.

"6. That although occasional recoveries have ensued subsequent to the spontaneous ejection of foreign bodies from the *bronchi*, such cases are rare; and the great number of persons so circumstanced have died at longer or shorter intervals."—*Ib.*

13. *Idiopathic Glossitis.*—In our first vol. pp. 213, 219, 448, and in vol. four, p. 533, will be found accounts of four cases of glossitis; the following cases, related in the ***Glasgow Medical Journal***, for February last, by JOHN ORGILL, Esq., are interesting, as contributions to the history of this rare affection.

CASE 1.—C. Kenmuire, a farmer, aged 50, complained of much difficulty in deglutition, which he attributed to inflammation of the throat. As he lived at some distance in the country, and could not come in himself, his wife came to me and explained the symptoms as well as she could. Appropriate remedies for the supposed disease—inflammation of the throat—were recommended. About a week after this, he was brought to town in a cart. I then found that the left half of the tongue was so much swollen, as completely to prevent articulation and deglutition. The right half of its natural size and appearance, was in part overlapped by the diseased half. For eight days preceding, he had not been able to swallow any thing solid; and during the last two days, he could not get down a drop of liquids. The pulse was nearly natural. I wished to apply leeches to the tongue; but the mouth was so completely filled with it, as not to afford space for them, except at the tip. I therefore put eleven large leeches to the root of the tongue externally; and, when they fell off, applied a cupping glass over the bites, by which means about six ounces of blood were obtained. But this afforded little relief. I then introduced a scalpel flat on the dorsum of the tongue; and made two incisions about half an inch deep, from the furthest point to which the instruments reached to the tip.

The incisions bled pretty freely; and the swelling was, in consequence, so far reduced as to enable him to answer questions intelligibly. He could also expectorate a little, which he was before unable to do, though, as he expressed it, "choking with his spittle," which was thick and very tenacious.

This was at noon. I saw him again about eight o'clock in the evening. The diseased half of the organ was then as much swollen as ever. I scarified it still more deeply; and ordered an enema with an ounce of castor oil. As he was evidently exhausted from

want of food, for which he had a good appetite, but which, as I have stated, he had been unable to take for eight days, I ordered some soup to be made, with the intention of calling in an hour after, and of attempting to introduce it into the stomach by means of the stomach-pump. I accordingly returned, and found him smoking his pipe, the last scarification, along with the enema, having given him great relief. With considerable difficulty, and very slowly, he swallowed a small bowl of soup. When I saw him next morning, the tongue had resumed its former swollen state. I then observed, what I had not done before, a peculiar lividity at the tip of the diseased half of the organ. I now introduced the scalpel as before, and made an incision more than an inch in depth. A great gush of most offensive pus followed, and gave the patient immediate relief. The incisions healed in eight days; the tongue having recovered its proper size and appearance. The sensibility on the left side of the tongue continued impaired for a year after, but it was afterwards gradually recovered.

Case 2.—March 5th, 1828, James Brown, a sailor, æt. 35, after languor, and some rigour, complained of difficulty of deglutition, which he attributed to inflammation of throat. I saw him next day, and found the left half of the tongue swollen to at least three times its natural bulk, and very painful. Articulation and deglutition were performed with much difficulty and pain. The surface of the tongue was foul, except at the tip, which was peculiarly clean and red.—The papillæ of this part seemed to have entirely disappeared, leaving the tip remarkably smooth. The median line formed an abrupt termination of the enlargement. Pulse 100, very hard and full. Some thirst. The abstraction of twenty ounces of blood gave some relief, and enabled him to swallow a brisk cathartic immediately after.—The next day the tumefaction and pain seemed to be again on the increase. Five large leeches were applied to the tongue; and the cathartic was repeated. The leeching gave immediate relief; and, from this time, the disease rapidly abated, leaving the organ in a healthy state on the fourth day after the attack.

Case 3.—July, 1828. J. B., a woman from the country, applied to me with glossitis affecting the whole organ, and terminating in suppuration of the right half. She was relieved by scarifications, by letting out the pus, by the lancet introduced at the side of the tongue, and by cathartics. Some months after, she was again attacked with the same complaint. As I was hurriedly called away when she came to me, she went to another surgeon, and I never learned the result. In this case, likewise, there was a peculiar lividity, and smoothness at the tip, on the side which suppurated.

Remarks.—In none of these cases could the patient assign an adequate cause for the complaint, unless we consider as such, the only one that Kenmuire could give. At the first bite of a very sour apple, which he had been eating two days before the attack, he felt as if a needle had run into his tongue; and a sudden flow of saliva followed. In the 4th vol. of the Dublin Hospital Reports, a case of idiopathic glossitis affecting the left half of the tongue is related by Dr. Graves,

and is, apparently, the only case on record in which inflammation was limited to the half of the organ. In the first two cases related above, the disease was confined to the left half also. This, of course, must be considered as an accidental coincidence; for we can hardly conceive why the left half should be more liable to inflammation than the right. Perhaps the lividity on the tip in the first and last cases may be considered as symptomatic of the suppuration which took place. If so, this would encourage us, in a similar case, to have recourse to incision as practiced in these cases with so much success. I believe it will be found very difficult to detect the presence of pus by the feeling of fluctuation which generally guides us in other cases. The tongue fills the mouth so completely, and the introduction of the fingers gives so much pain, that putting out of the question the unsteadiness of the organ, its peculiar texture, and the deep seat of the pus, it may be considered a matter of some importance to fix on some appearance as indicative of the formation of an abscess. So far as these cases go, the livid colour of the tip of the tongue may be considered as symptomatic of suppuration.

14. *On Permanent Involuntary Contraction of the Muscles.* By Samuel Smith, Esq. of Leeds.—It is not uncommon in surgical practice to meet with cases, where certain muscles have remained for a great length of time, rigidly and permanently contracted. This state sometimes results from disease in the nerve distributed to the affected muscles; occasionally it is produced by the muscles having their points of attachment unduly and unnaturally approximated for a considerable length of time—as in unreduced dislocations—in the treatment of fracture, &c.; and, in some cases, the precise cause cannot be ascertained.

When a muscle has long been in this state, it often remains contracted, solely from habit, even after the cause which originally produced it has ceased to operate; and by breaking this habit, relief may generally in a short time be obtained.

There are certain sets of muscles which act as antagonists to each other, as for example the flexors and extensors of the arm. The contraction of either of these sets of muscles is always accompanied with a simultaneous relaxation of the other. Thus, if the arm be powerfully flexed by the biceps, and the extensors brought into action, the extensors no sooner act than the biceps become relaxed.

Suppose then the flexors of the arm to have been some time in a state of permanent involuntary contraction; if the limb, by gentle force, be put in the position of perfect extension, the flexors become relaxed, and by maintaining this position a certain length of time, this unnatural *habit of involuntary contraction* which has been acquired in the flexors, may be broken or destroyed. To prove the success which may be expected to follow this plan of treatment, the following cases are selected from many others which have come under my notice.

Mary Leak, aged 25, a stout, robust woman from the country, was admitted a patient of the Infirmary under my care, July 30, 1820.—

She had been fifteen months under treatment, suffering much during the whole of this time from permanent contraction of the quadriceps extensor femoris, the whole of which muscle was in an extremely rigid state. She walked without pain, but an inability to bend the right knee in the least degree gave her the appearance of having a wooden leg. The warm bath, frictions, and many other means had been persevered in for a great length of time, without producing the least effect upon her complaint. On the day succeeding her admission, I placed her on the bed on her left side, and taking hold of the ankle with my right hand, grasping the thigh with my left, I succeeded in drawing the heel and pressing it against the buttock, thus producing a perfect flexion of the limb. It is necessary to explain that in accomplishing this, recourse was had more to art and cunning, than to force. It was gratifying to find that the rigid muscles had become perfectly relaxed, and in order to destroy the tendency to reaction, two leather straps with buckles were placed tight round the upper part of the thigh and ankle, binding the limb in this position, the heel touching the buttock.

She was ordered to remain in bed bound in this manner until my visit on the following day. The relief was immediate and complete. Upon being released next day, it was found that the muscles, which had been for so long a period contracted, were quite relaxed; and not only so, but the tendency to involuntary contraction was destroyed. Suspecting, however, it might return, she remained an in-patient ten days: no return of the complaint took place; she was made an out-patient, and appeared as such August 30. She was perfectly well, and had suffered no relapse.

October 20, 1826. William Holdin, aged 36, admitted a patient of the Infirmary, under my care, on account of the right masseter muscle being permanently contracted. He has been fourteen months incapable of opening his mouth more than to admit the handle of a leaden spoon. Upon introducing the finger within the cheek, and the thumb without, the muscle can be grasped, and in hardness it resembles bone rather than muscle. He has been upwards of a year unable to close the right eye. He was directed to wear a wooden wedge between the teeth so as gradually to open the mouth, and thus gain upon the contracted muscle. No medical treatment was adopted, and in the course of a week or ten days the mouth could be opened upwards of an inch; the masseter muscle had become relaxed and soft, and he was so much relieved that at his own particular wish he went out, November 10th, in order that he might labour for his family; he was, however, directed to continue the use of the wooden wedge for some time. He was able to take common diet, which had materially improved his strength, having previously lived a long time upon spoon-meat, from his inability to open the mouth: he could also close the eye, which he had not done for upwards of a year.

November 2d, 1829. Miss H., a young lady, residing about twenty miles from Leeds, had the misfortune, nine weeks ago, to fall and sprain her wrist, for the relief of which, leeches and the usual applications were had recourse to, under the direction of a very respectable prac-

were had recourse to, under the direction of a very respectable practitioner; in a few days she was better of the sprain, but the ring and little finger were permanently contracted, and she had lost the power of extending them: to relieve this affection, various means were had recourse to without effect; she then came to Leeds to place herself under my care. Finding she had considerable pain upon pressure, in the course of the ulnar nerve, I thought it advisable previous to extending the fingers, to apply a small blister, (three inches long and one broad,) above the wrist, and in the direction of the nerve. The day following, the fingers were greatly extended; dressings applied to the blisters, a compress of lint, and a splint reaching from the extremity of the fingers a little beyond the wrist, was firmly secured by a bandage to keep them extended.

Next day they were removed, the contraction of the flexors had ceased, she had the perfect use of her hand, and has suffered no relapse up to the present time, (June, 1830.)—*North of England Medical and Surgical Journal for Nov.* 1830.

15. *Absorption of the Iris.*—Mr. MIDDLEMORE, assistant surgeon to the Birmingham Eye Infirmary, states that he has several times known laceration of the iris from local injury, followed by its partial, and in one instance, its total absorption; and in every case that the organ so injured, has, eventually, become amaurotic.

A boy, he says, received a blow upon the eye, from a piece of metal, which was followed by considerable pain and inflammation, and laceration of the iris; for a time, the pupil was cordiform, being pointed at its lower part; slowly and without any pain, the whole of the iris was absorbed, and the eye became amaurotic.—*The Midland Medical and Surgical Reporter, Feb.*, 1831.

16. *New operation for the cure of Ptosis.*—R. T. HUNT, Esq., assistant surgeon to the Manchester Institution for curing diseases of the eye, has proposed in cases of ptosis, occasioned by the loss of power in the levator, whether attributable to the actual destruction of a part of the muscle, or to paralysis of the nerves supplying it, caused by injury or disease, an ingenious mode of treatment, by which the action of the occipito-frontalis is substituted for that of the levator. In the action of raising the eye, the levator palpebræ is not the only muscle brought into play. The anterior portion of the occipito-frontalis also considerably contributes to this effect, by elevating the superciliary integuments into which it is inserted. These muscles, says Mr. H., act so much in concert, that it is almost impossible to draw the eyebrow upwards, whilst the eye remains perfectly shut, and equally difficult to depress the eyebrow, whilst the eye remains wide open. And when we reflect that the origin of the levator is situated at the very extremity of the orbit, and that it is inserted into the tarsus, a part so easily moved, it becomes evident that, unless this muscle's action were restrained by some other power, the tarsal margin would be drawn too far into the orbit. The anterior fibres of the occipito-frontalis which

are so inserted into the superciliary integument, as when in action, to stretch the upper part of the skin of the eyelid, constitute this power; and it is with reference to this combination of muscular actions, that the following method of operating is recommended.

The operation is performed by dissecting off a fold of integument; the difference from the usual way of proceeding consists in the portion removed. The upper incision is made immediately below the line of hairs forming the eyebrow, and extends each way, to a point, opposite the commissures of the eyelids. In making the lower incision, no precise direction can be given. It should approach within a short distance of the tarsal margin, varying in the extent of the portion included between the two incisions, according to the greater or less degree of relaxation of the skin, which is different in any two individuals, and it should meet the upper incision at both extremities. When the intervening portion has been detached, the divided edges should be accurately united by, at least, three sutures, and the wound dressed in the usual manner.

The effect produced, when adhesion is perfected, is the attachment of the eyelid to that portion of the skin of the eyebrow, upon which the occipito-frontalis acts, and by means of this attachment, substituting the action of this muscle in raising the eyelid, for that of the levator, which is no longer capable of doing so.

Mr. H. states, that the removal of so large a portion of skin does not produce, contrary to what might be supposed, any deformity.

17. *On the Energetic Contractions of the Heart as a guide in the employment of Venesection.*—It has long been acknowledged that the pulse cannot always be considered as a sure guide in the employment of venesection; an operation which is often necessary even when the state of the pulse seems to contraindicate its employment. "In cases of this sort," says Laennec, "the stethoscope affords a rule much surer than the pulse: whenever the contraction of the ventricles is energetic, we may bleed without fear; the pulse will rise. But if the contractions of the heart are feeble, although the pulse still retains a certain degree of strength, we must be cautious respecting the employment of venesection."

Dr. Graves, in a late clinical lecture, delivered at Sir Patrick Dun's Hospital, Dublin, and a report of which is given in the *London Medical Gazette*, for March last, stated, that for aught he knew, the latter proposition might be correct, but he decidedly denied the truth of the assertion, that whenever the contraction of the ventricles is energetic, we may bleed without fear; an assertion, he says, so much at variance with the results of his experience, that he rather thinks it must have been the offspring, not of observation, but of theory. "In the first place," says Dr. G. "in persons who have hypertrophy and dilatation of the heart, the ventricular contractions will be energetic often until a short period of their death; and under circumstances in which venesection would be totally inadmissible. Of this I have lately witnessed two examples, and one of them made a deep impression upon my mind,

as, misled by the precept of Laennec, I was induced to bleed the patient, attending only to the violence of the heart's pulsations, and not to the general symptoms. In this case, the man died in the course of a few hours after the venesection. Dissection, indeed, revealed lesions which proved that death was inevitable under any mode of treatment; but still that event was no doubt accelerated by the bleeding. Nor do diseases of the heart form the only exceptions to Laennec's rule; for I can asert, in the most positive manner, that I have seen cases of pneumonia in which the heart's pulsations continued violent until within a short time of dissolution: so much so indeed, as to induce the erroneous belief in myself and other medical attendants, that this organ was in a state of hypertrophy and dilatation; and yet, it was found, after death, to be in every respect healthy. In these cases, the extent of pulmonary hepatization which was detected on dissection, together with the shortness of the interval which elapsed between the time when we observed the heart's pulsations to have been so violent, and the fatal termination of the disease, made us rejoice that no further use of the lancet had been made; as the patients' friends would have most probably attributed death to the untimely loss of blood. I am the more anxious, gentlemen, to impress upon you these facts, because the language in which Laennec expresses himself upon this subject is so strong. His concluding observation is as follows. "The certainty and facility with which the cylinder indicates the propriety of blood-letting in such cases as those above-mentioned, (which have been hitherto considered the most difficult in practical medicine,) appears to me to be one of the greatest advantages to be derived from the employment of this instrument. It is certainly of the most general application, as it refers to the employment of one of our therapeutic measures, which is the most ingenious or the most useful of any, and which may be had recourse to in almost all diseases."

It is with regret I find myself obliged to differ, on this practical point, from one to whom our science perhaps owes more than to any author who ever lived.—*American Journal of the Medical Sciences, August*, 1831.

18. *On the Treatment of Hooping Cough.*—By Dr. A. T. Thomson, of the London University Dispensary.—In the treatment of hooping cough, Cullen's method of dividing the disease into three distinct classes is highly judicious; each stage being marked with its characteristic features, which distinguish it from the others, and each requiring a distinct plan of treatment.

In the *first stage*, the treatment must be regulated by the type of the fever. Thus, although bleeding is proper when the excitement is considerable, or when the pulse is hard, small and quick, and the breathing oppressed, indicating congestion, yet, as it is an acknowledged maxim that the symptoms of spasmodic affections are rather increased than diminished by the use of the lancet, it would be highly injudicious to bleed, unless such symptoms as have been just described clearly point out the necessity of abstracting a portion of the

circulating mass. In my own practice, I have seldom had occasion to employ bloodletting; but in some of the cases in which it has been requisite, the necessity was not limited to the commencement of the disease; and in one distressing case for which I was consulted some weeks since, bleeding, although it did not save the patient, yet greatly soothed his sufferings, and rendered the closing hours of life comparatively comfortable.

Nothing is so likely to produce that state which requires the use of the lancet in hooping cough, as the imprudent exposure of the patient to sudden alterations of temperature; and therefore, when we consider also how much milder the disease is in warm climates, the propriety of confining those laboring under it to one or two apartments, kept at a medium temperature, must be obvious. The custom of frequently changing the air was founded on an erroneous view of the disease, and is now, I believe, rarely recommended, until the disease has nearly run its course, when the change, operating as a tonic power, rapidly annihilates the cough, which sometimes continues, from force of habit, in persons of weakened and irritable constitutions.

The early employment and repetition of emetics in hooping cough, is a judicious remnant of the old humeral practice in this stage of the disease. In infants, emetics free the stomach not only of the mucus from the trachea and bronchia, which is brought up in coughing and immediately swallowed by very young patients, but also, in those more advanced in years; they dislodge from it that preternatural secretion of mucus, which has been already mentioned as occurring in this organ; for it is a well-known fact, that, through the connexion of the stomach and the larynx by means of the par vagum, nauseating medicines, rousing the stomach to discharge its contents by vomiting, loosen the adhesion of viscid mucus to the lining membrane of the larynx and trachea. Emetics also determine powerfully to the surface; and when the paroxysms of coughing assume an intermittent character, which is not unfrequently the case, the administration of an emetic at the moment when a paroxysm is expected, breaks the periodic habit, and facilitates the cure of the disease, on the same principle as in ague. I have, nevertheless, seen much mischief result from the frequent repetition of emetics in those of delicate and irritable habits; and when the stomach and the chest consent, if the expression be allowable, and the paroxysms are terminated by vomiting, the exhibition of emetics is not only unnecessary, but highly detrimental.

Practitioners are divided in opinion with respect to the kind of emetic which should be employed. Some imagine that by the employment of squills and other nauseating expectorants, as emetics, a double indication is effected; but as the operation of all expectorants is through the stomach, on which they must produce nausea before the air-tubes can be relieved by them, those emetic substances are the best which are most easily limited in their effects; and consequently ipecacuanha, combined with small doses of tartar emetic, is preferable to every other emetic.

The promotion of expectoration is undoubtedly useful in this stage of hooping cough; but, in very young subjects, it can prove beneficial only when accompanied with vomiting; and as emetics are not always advisable, other methods have been sought for, to promote this effect. Among these, I have seen the inhalation of both highly-diluted nitrous acid gas, and of the vapor of hot tar, tried with apparent benefit. The former was first tried by Mr. Patterson, surgeon to the Ferton Hospital, and is noticed in Dr. Carmichael Smyth's Report upon Nitrous Acid Gas; but the cases were too few to form a decided opinion of its powers; and in my own practice, I have seen it used once only: in that instance the patient rapidly improved. Mr. Patterson employed it under the supposition that it might neutralize the virus in the air-passages of the lungs, and thence render it inert, in the same manner in which it destroys contagious matter floating in the atmosphere: I used it with the hope of exciting the lungs to discharge the mucus, with which, in the case referred to, they were completely choked up. It certainly produced the desired effect; and after the employment of it for three successive days, the most striking improvement took place in the patient, who previously appeared to be sinking into his grave. I have had no other occasion for using the nitrous acid gas in hooping cough, but I feel much disposed to recommend it in similar cases. I have employed more frequently the inhalation of the vapor of tar, in less urgent cases, and can bear testimony to its effects in promoting the expulsion of the glairy mucus from the trachea. I may here mention that I have lately found it equally useful in a very distressing case of asthma. The simplest method of extracting tar vapor is to put the tar in a pipkin capable of holding triple the quantity intended to be used, and placing this in a vessel containing sand sufficiently heated to keep the tar in a state of gentle ebullition: it promotes expectoration, which is followed by sleep, from which the patient awakes greatly refreshed.

In this stage of hooping cough, when the excretions are not duly effected, it is necessary to resort to purgatives; but I must agree with Dr. Cullen in condemning their frequent employment.

In the second stage of hooping cough, which may be regarded as commenced when the febrile symptoms have abated, and the cough returns in regular paroxysms, such as in the cases now under treatment in this Dispensary, the symptoms are to be combatted by those medicines which, having sedative powers, allay the morbid irritability of the nervous system, and, consequently, act as antispasmodics.—This class of remedies is extremely extensive; and the greater number of the articles which it contains have been, at one period or another, employed in hooping cough; and although each has had its advocates for a certain time, yet many of them, either from the influence of fashion, which has a sway even over medical opinions, or from a conviction of their inutility, have fallen into disuse. The list is still sufficiently extensive; but I will notice those only of which I am able to speak from my own experience and observation.

The first of the tribe of narcotics, opium, has been extensively employed, but has generally been supposed to prove hurtful, by check-

ing expectoration: this is true when opium is given alone, yet, in combination with the nitrate of potassa and ipecacuanha, or tartar emetic, I have found it answer every indication. In some habits, its effects upon the functions of the brain stand, certainly, in the way of its exhibition; but in these instances I have found the acetate of morphia prove beneficial; and were this remedy less expensive, it would, with the exception of prussic acid, render nugatory the employment of every other narcotic. I have given it, dissolved in the bitter almond emulsion, in doses of one-eighth of a grain, once in six or eight hours, to children five years old. I have not found the same beneficial results from the use of the lactucarium, or of hyosciamus, both of which have been highly extolled as sedatives in hooping cough.

Belladonna has been very extensively employed on the continent, as an antispasmodic, in hooping cough; and we might, *a priori*, augur well of its power from its general effects upon the nervous system. In Germany, the root of the plant has been greatly extolled. It has been given in doses of a quarter of a grain gradually increased to a grain, to children under one year of age; in doses of half a grain, at first, to children between the ages of two and four years; and in three quarters of a grain, to those above this period of life. I have had no experience in the use of the root; but my opportunities of witnessing the effects of belladonna have been numerous and satisfactory, and the cases now under treatment here will enable you to verify the opinions I have to offer you concerning it. I have generally given the medicine, at first, in doses of the tenth of a grain, to children of from two to five years of age; and, to insure the accuracy of the dose, have prescribed in the form of pills made up with crumbs of bread, which, as they are small, are readily swallowed in a teaspoonful of pap or gruel. In combination with the extract of belladonna, I have usually prescribed ten or twelve grains of the subcarbonate of potassa or of soda, and half a grain of powder of ipecacuanha, to be taken in an ounce of the bitter almond emulsion, between each dose of the pills. The result of this treatment has been the diminution of the cough, both as to violence and the frequency of its recurrence; and except in a few instances, which I am inclined to refer to idiosyncracy, the plan does not appear to have been productive of the smallest inconvenience. When the dose has been too suddenly augmented, or when too large a dose has been given at first, it dilates the pupil, produces a paralysis of the retina, and a consequent temporary blindness, which continues two or three days after the medicine has been discontinued, but seldom occasions any other unpleasant effect. In one case, however, in which a boy, five years old, had taken the dose intended for his brother of nearly double the age, the head was singularly affected: a state of delirium, not unlike that attendant on mania, supervened; and although the attention could be easily roused, yet the mind immediately relapsed into its morbid state, and continued so for two days and nights, during which there was uninterrupted watchfulness. I generally continue the use of belladonna, gradually augmenting the dose, until a scarlet eruption covers the skin, when I stop until this disappears. Whilst this eruption is out,

the cough ceases, and if it do not soon subside, the habit is so much overcome as to prevent the recurrence of it with as much severity as before.

Digitalis has been given as a sedative in this stage of hooping cough, but with various results. The unsuccessful instances, however, in my opinion, have arisen from the exhibition of the remedy under improper circumstances; nor do I think that the manner in which this powerful remedy operates on the animal economy is generally understood. Digitalis has been given to keep down the arterial action in hooping cough, as well as in mania,—an effect which I am satisfied it produces in neither disease, unless it be given in large and nauseating doses, and unless the arterial excitement be previously lowered. When this has been effected, when the pulse is feeble, and the habit in a state approaching to that of debility, or general relaxation, digitalis is a most certain and powerful sedative, calming nervous irritation, allaying spasmodic action, and inducing sleep. The striking effects of this article of the materia medica in mania, first induced me to employ it in hooping cough, and in delicate habits I have found it answer my expectations. The form of the remedy which I have usually employed is the tincture, which I give, according to circumstances, in small doses at first, gradually increased to an extent much beyond what is generally imagined can be safely prescribed. Thus, in hooping cough, I have carried the remedy to the extent of forty drops, three time a day, to a boy eight years of age; and in adults, laboring under mania, I have given it, with the best effects, in doses of 110 drops, once in eight hours, for ten days successively.

Alkalies and prussic acid act, nearly in the same manner, on the coat of the stomach, and through that organ of the general system. When taken into the stomach, their first effect is on the nerves of the viscus, the irritability of which they lessen in proportion to the extent of the dose, and communicate this effect by sympathy to the larynx. Prussic acid, in particular, is unquestionably the most powerful antispasmodic which can be employed in hooping cough; and it has the advantage of being equally useful in every stage of the disease,—the due apportionment of the dose and its combinations enabling it to answer the indications to be attended to in every stage of the complaint. Thus, in the first or febrile state, the prussic acid, given in medium doses of one or two minims to children of ten or twelve years of age, in combination with ipecacuanha and nitrate of potassa, moderates the fever; in the second or spasmodic stage, in larger doses, it allays the violence of the cough; and in the last stage in small doses of a single minim, combined with infusions of bark, it aids the tonic power of the bark by allaying the irritability of the stomach, and thereby enabling the gastric fluid to be secreted more slowly, consequently in a more natural state, and better fitted for the purposes of digestion. In one of the cases now under treatment, the dose is one minim only, owing to the great delicacy of frame of the child; but in the others, the dose is two minims, repeated every fourth hour.

Musk, conium, the sedum palustre, and acetate of lead, have been used by different physicians, and have been extolled; but I have had

no opportunity of forming an opinion as to the efficacy of any of them; except conium, which has rather disappointed my expectations in hooping cough. I am well aware, however, that in the form of extract, much depends on the preparation of the remedy; and even in the form of powder, the manner in which the leaves are dried, and the powder is preserved, will greatly alter its influence as an antispasmodic.

Besides the employment of sedatives in this stage of complaint, stimulant remedies are also prescribed, with the view of subduing the propensity of spasmodic action in the trachea, by exciting, as Dr. Good remarks, "a general or remote local revulsion." But, unless as external applications, I have had no experience of the value of this class of remedies. The internal stimulants which have been employed in hooping cough are cantharides, ammonia, ether, camphor, myrrh, the herb paris, and the rhus *vernix*. The external stimulants are camphor, garlic, ammonia, oil of amber, turpentine, tartar emetic, and tincture of cantharides, all of which I have seen beneficial, when employed in combination with oil or soap liniment, in the form of embrocations; probably producing their good effects by stimulating the dorsal and cervical nerves, which are those chiefly concerned in the function of respiration.

That period, in the progress of hooping cough, in which the spasmodic state has somewhat abated, and the cough is kept up rather by habit than by the continuance of the operation of that virus which originally produced it, is regarded as its third stage. The frame of the body, and its powers exhausted by the previous diseased action, is morbidly susceptible of every impression which can keep up the spasmodic habit. In this stage, therefore, tonics are judiciously prescribed; and the preference is given to those which produce their effects most quickly, and are the least disagreeable to the palate.—Cinchona has been employed for this purpose since the days of Sir John Floyer, who lived in the seventeenth century; it is now superceded by the sulphate of quinia, which can be given to children in the form of pills, with as much facility as the extract of belladonna. I have employed the oxide and the sulphate of zinc, nitrate of silver, iron in various forms, and the arsenical solution, as tonics in this stage of hooping cough, and feel some difficulty in determining to which I should give the preference. Perhaps the best of all tonics, at this period of the disease, is change of air; and this, in conjunction with ass's milk and the mucilage of the lichen islandicus, I have seen restore children worn down to skeletons, and rapidly becoming tabial, when no other human means appeared likely to relieve the little sufferers.

The diet in hooping cough should be of a vegetable and farinaceous kind, until the second stage of the complaint be over; after which, light animal food may be allowed.

I have only further to notice that hooping cough is said to be cut short, in its progress, by vaccinations on the third week after the commencement of the hoop. This method of treatment was first suggested in Germany, and its efficacy is said to have been lately con-

firmed in America. Allowing that the observations of this influence of vaccination be correct, the remedy must always be of very limited utility, as it is not likely that vaccination should be delayed, with the risk of smallpox being taken in the interval, in order to keep it in reserve as a remedy in hooping cough.—*Boston Medical and Surgical Journal, May* 24, 1831.

19. *Case of Constitutional Disease, arising from a Simple Local Irritation.*—The following case, related by Dr. Rynd, in the *5th Vol. of the Dublin Hospital Reports*, is extremely interesting, as *proving that a morbid poison may be generated in consequence of a local irritation, and that this poison may contaminate the entire system;* and therefore tends to overturn some of the unphilosophical notions even to this day entertained by some respecting the necessarily specific nature of a number of diseases. The subject of this case was a gentleman, aged thirty-eight, of a florid countenance, indicating a highly sanguineous temperament; rather corpulent, and not of very active habits. He had previously enjoyed good health, unless from occasional attacks of cynanche tonsillaris. He had been, during the past winter season, more than usually employed in anatomical pursuits, and about three weeks before he wounded himself with the pin, he received a slight cut on the thumb while examining a subject that had died of diseased hip-joint; the wound, however, had healed speedily and well. He has been married twelve years, has had nine healthy children, seven of which are living, *and by no accident or possibility could he have contracted any syphilitic taint.*

About three weeks after the first appearance of the fungus, the lymphatics of the forearm became inflamed; the inflammation extended along their course to the axilla; sixty leeches were applied, and the inflammation was subdued. About a month afterwards, an enlarged gland appeared in the axilla, which was also resolved by the application of leeches.

On the 27th of September the abscess burst, and on the 29th he went to the country, emaciated and debilitated to an extent not to be explained by the effects of so small a local disease. On the 10th of October his throat felt sore, with some trifling difficulty of swallowing; he returned to Dublin, his throat was examined, and no appearance of disease was discovered, except a very slight blush of inflammation, which soon passed away. Towards the latter end of October, an eruption of scarlet patches came out on his forehead, forearms, and slightly on the shoulders and inside of the thighs. Sarsaparilla and the nitro-muriatic acid were now prescribed, and taken in considerable quantity. In this state he remained until the end of December, his throat being on one day free from uneasiness, and perhaps on the next extremely sore, the eruption sometimes disappearing entirely, sometimes showing faintly under the cuticle like fading measles, and sometimes of a bright red scarlet colour. He continued taking the sarsaparilla up to this period, with warm baths twice a week, and his general health had been improving since the sore on

the thumb had healed. He got weary of taking medicine, and now discontinued it, and trusted to a nutritive diet, and the use of port wine.

Early in January, 1829, an anomalous kind of eruption appeared on his scrotum, and produced great annoyance, it was so intolerably itchy; but it scaled off and disappeared in the course of a week, without the adoption of any medical treatment whatever. On the 15th, a tender tumefaction arising from periostitis was discovered on the left tibia; on the 19th it disappeared. On the 2d of February, an eruption similar to what had before appeared on the scrotum reappeared; it also went away without the use of medicine. During the months of March, April, and May, his throat could never be considered in a state of health, and exhibited so much variety of symptoms, both as to appearance and pain, as rendered the case inexplicable as it was curious; sometimes when there was no trace of inflammation visible, the pain would be excessive. An erythematous redness was, on the other hand, often suffused over the soft palate, and occasionally an appearance resembling abrasion of the surface, while there were no indications of exacerbation of pain. Sometimes whilst speaking, his voice would suddenly fail, and a paroxysm of cough interrupt his articulation; the cough was hard and unattended by expectoration; he would often commence eating, suffering under extreme torture in every attempt to swallow, and after a few moments he would perform deglutition without the slightest pain. In a word, these symptoms came and went alternately without any assistance being sought from medicine. But this uncertain and precarious state of health could not be borne any longer, and he determined to try the effects of mercury, though contrary to the advice of his friends, and took two grains of calomel daily for four days, when he was seized with a cough, accompanied with some hæmoptoe. The mercury was discontinued immediately, and never resumed: his mouth was made slightly sore by this quantity, his gums became spongy, and his breath foul. All the symptoms gradually and slowly declined, and he is now occasionally visited by the following:—Wandering pain in the hip joint of the right side, and weakness which prevents exercise on foot to any considerable extent. Some few pale and almost indistinct stains of eruption on his forehead after exercise. Some broad, flat patches of eruption of a scarlet colour, but not always of the same intensity, on the back of the hands: during the last winter the skin on the palms of his hands was hard and horny, and the natural lines appeared like fissures; this has now disappeared. His throat has never been sore since he took the calomel.—*American Journal of the Med. Sciences, August*, 1831.

20. *Poisonous Effect of the Blood of a Patient upon Leeches.*—Dr. Graves, in a clinical lecture delivered at the Meath Hospital, Dublin, and which is published in the *London Medical Gazette* for February last, related the following curious case. A woman was admitted into the hospital for an obstinate stomach affection, which had many of the characters of organic disease, but the result proved that no perma-

nent alteration of structure existed in the stomach, for she completely recovered. This patient at one period of her complaint was afflicted with constant nausea and vomiting, accompanied by considerable tenderness in the epigastrium, for the relief of which twelve leeches were applied to the region of the stomach. Shortly after they had begun to act, they fell off, and immediately died. This curious circumstance naturally arrested attention, and twelve leeches more were ordered, the precaution being first taken of perfectly washing the skin to which they were to be applied. These leeches shared the same fate as their predecessors, and this happened in several successive trials, made by way of experiment, until about sixty leeches, all previously in good health, had been thus destroyed. Of course there is no other way of accounting for this phenomenon, than by supposing this woman's blood was so different in composition from human blood in general, that it proved poisonous to these animals. No accurate chemical experiments were made to ascertain what was the nature of this poisonous principle, but it may be observed that the physical properties of her blood presented nothing remarkable, its serum and crassamentum having the ordinary colour, consistence, and smell.—Neither could this quality have been owing to any medicine she was at the time using, for the blood continued to act as a poison to the leeches for several days after she had altogether left off medicine. It was suggested by some of the students, that the poisonous property might have arisen from a small quantity of hydrocyanic acid which she had been taking, but the remark just made disproves the truth of this hypothesis. Besides, we have frequently had patients in the hospital in whom much larger doses of hydrocyanic acid were not followed by this state of the blood. In reference to this it may be also observed, that the lower orders of animals seem much less susceptible of the effects of certain poisons which act upon the nervous system, than the higher orders.—*Ib.*

21. *Case of Spontaneous Lactation at an advanced age.*—The following example of this curious and interesting physiological phenomenon, is related in a recent number of the *North of England Medical and Surgical Journal*, by GEORGE SEMPLE, Esq., of Shipley Hall. Mrs. B., æt. 49, mother of 8 or 9 children, the youngest of whom is about 12 years old, lost, a year ago, a daughter-in-law, who died of peurperal inflammation about a fortnight after confinement of her first child.

On *her* death Mrs. B. took the charge of the infant—a little, puny, sickly baby. The child was so fretful and uneasy, so averse to taking any kind of food, and so troublesome, that Mrs. B. after several sleepless nights was induced, by way of soothing, to permit her to take the nipple of her breast into the mouth—the child was pleased and soon sunk to rest, and the old lady of course continued to give her this cheap and innocent sedative, from time to time. In the course of from thirty to thirty-six hours she felt very unwell, her breasts became extremely painful, considerably increased in size, and soon after, to

her utter astonishment, the lacteal fluid was secreted, and poured forth in the same abundance as on former occasions after confinement of her own children.

The child, now a year old, is a fine, healthy, thriving girl, and only a few days ago, says Mrs. S., I saw her eagerly engaged in obtaining an apparently abundant supply of healthy nourishment from the same fountain, which nearly twenty years since poured forth its resources for the support of her father.

Mrs. B. is a stout, healthy woman, and has continued to menstruate regularly, both since weaning her last child, nearly eleven years ago, and during the time she has suckled this little grandchild.

22. *Congenital absence of the Gall-bladder.*—M. AMUSSAT communicated to the Royal Academy of Medicine, the case of a man, twenty-four years of age, who died from a white swelling of the knee, and in whom, on examination after death the gall-bladder was found entirely wanting: the ductus choledocus was formed by two large canals.

The total absence of the gall-bladder is an extremely rare occurrence, and one the possibility of which has been doubted by several anatomists: it has been, however, met with.—*Gazette Medicale, 26th March*, 1831.

23. *Two newly-discovered Muscles for compressing the Dorsal Vein of the Penis, in Man and other Animals.*—Dr. HOUSTON has described, in the fifth volume of the *Dublin Hospital Reports*, two muscles situated between the arch of the pubis and the penis; and for which he proposes the name of *compressores venæ dorsalis penis.*—These muscles are more distinct in most of the mammalia, than in man. In the latter, they arise from the rami of the pubis, above the origin of the erectores penis and crura, and ascending in a direction forwards, are inserted above the vena dorsalis by joining with each other in the median line. They form a thin stratum of muscular and tendinous fibres, about one inch long, and three-quarters of an inch broad, and may, perhaps, be looked upon as portions of the erectores penis, which, instead of being inserted into the sides and lower part of the corpora cavernosa, mount over those bodies, to exert their compressing influence on the vena dorsalis. They enclose between them and the penis, the vein, arteries, and nerves of this region. Their anterior fibres are distinguished from those of the erectores, by the fibrous attachment of the crura to the pubis; their posterior margins are kept distinct from the front part of the levatores ani, known under the name of Wilson's muscles, by the pudic artery, which divides them in its course towards the dorsum of the penis.

The best procedure to display these muscles is the following:—Detach the bladder and levator ani, with the hand, from one side of the pelvis; then divide with a saw the pubis and ischium about one inch from the symphysis, and break off the bones at the sacro-iliac articulation: next dissect away carefully the remaining portion of the pubis

from the symphysis, periosteum, and crura penis, and then the compressores venæ, bearing still their natural relation to the crura and other muscles, may be exposed with very little difficulty.

The insertion of the muscles being in a great measure outside the pelvis, they may also be demonstrated without the section of the bones, by cutting on them in front of the pubis, and looking carefully for their tendon at the side of the venæ dorsalis: from the tendon the knife may be carried downwards and backwards in the course of the fibres, and nearly the whole of the muscles can be thereby exposed.

It must however be remembered, that it will be needless to search for them in a thin emaciated individual, where the other muscles of the perinæum are so pale and soft, that even they can scarcly be distinguished. The subject should be robust, and the muscles red, in order to demonstrate them.

The use of these muscles is evidently to compress the dorsal vein of the penis, and mechanically obstruct the return of blood.

24. *Taliacotian Operation for Restoration of the Under Lip.*—By C. Bryce, M. D.—In July last, the Hakim-Bashi sent me, at Constantinople, the following singular case of destruction, by mortification, of the under lip and chin, which, from the success following the treatment pursued, seems worthy of notice.

The subject of it, a Turkish child, three years old, was attacked, in June preceding, with scarlet fever, that spread sparingly over the body, and in which the mouth and throat were aphthous, but not ulcerated, disappearing by the use of a wine gargle and laxatives. The subsequent affection of the mouth was preceded by much fever and restlessness, and appeared in a small pustule on the left commissure of the mouth, which became rapidly black, and open, discharging an offensive sanies; the gums at the same time were discolored, and bled on the child's crying. The sore formed on the outside of the mouth spread quickly downward and laterally; and on the seventh day of the disease, when the patient was first brought to me, the whole of the under lip and chin presented a fetid, black, irregular-shaped slough, surrounded by a broad, dark-colored line of inflammation, marking the threatened progress of the disease on the integuments, the left cheek, and upper lip, which were painful and hard. The incisors of the lower jaw were loose, their gums and alveoli partaking of the affection, and by contact, involving the lip and anterior edges of the tongue. The tongue was œdematous and loaded, but the fauces showed no appearance of unhealthiness. The countenance had a peculiar livid color; body dry and hot; pulse small and rapid; diarrhœa.

From certain circumstances, an emollient poultice to the sore, and frequent ablutions of the mouth, and a few drops of laudanum internally, were all that could be recommended at this period. On the third day's visit, the tenth of the disease, observing the rapid progressive destruction of the integuments, the gangrenous parts were touched with diluted nitric acid, and sulphate of quinia with opium, were exhibited. This external treatment, twice renewed in thirty-six hours,

did not in any measure arrest the spreading of the mortification, which had now involved an inch and a half in circumference of the left cheek and upper lip, and extended downwards under the chin. The diarrhœa was checked, and the child had enjoyed some hours of sleep, but was evidently sinking. It was now determined on to apply a fermenting poultice over the diseased parts, and, and to administer pills composed of quinine, camphor, and hyoscyamus, in large doses, and allow 8 oz. porter daily. This plan, after forty-eight hours' continuance, showed a marked improvement in the patient: the mortification had made no further progress for the last eighteen hours; the slough was partially detached; whilst the look of the child was improved, with a slower and a fuller pulse. The poultice and porter were continued as before, as were the pills, reduced in strength. In a few days the slough was totally separated, leaving a florid granulating surface. The integuments had assumed their natural color and feel; four incisors and two canine teeth, with fragments of alveoli, were removed, as were also three small exfoliations from the under maxillary bone. The tongue had thrown off its slough, and appeared healthy.

The only treatment practicable for the moment, was to encourage granulations by spirituous applications, and support and diminish the loss of substance by compresses and bandages, whilst the general health of the child was improved by liberal diet and change of air. In six weeks a healthy cycatrix had formed, and the breach of continuity was much lessened by its contractions. It was now very evident that a complete, or even partial, reparation of the great destruction of the soft parts, could be promised only by an operation, the necessity for which arose as much from the disagreeable deformity of the face, as from the evident ill effects on the system that the constant flow of saliva occasioned. The writer was encouraged to this attempt by the very perfect success of a Taliacotian nose, made a short time before by him at Constantinople. The operation, in which he was assisted by the advice and skill of his intelligent friend Mr. Millingen, was performed by removing from the upper part of the throat a triangular portion of the integuments, whose suitable form and size had been judged of, by measuring a model of the lip and chin adapted to the deficiency. This segment was now reflected, the twist being made immediately on the point of the chin, and its two angular points attached by ligatures to the commissures of the mouth, previously made bare by scarifications, as was also the whole of the former cicatrized surface. The flap was further supported by adhesive plaster and bandage, and the wound on the throat brought together by the same means. The parents were directed to keep the child in a recumbent posture, and to feed her sparingly on pap. The wound was looked at on the third day;—on the fifth the dressings were changed, when adhesion had taken place on one side very completely, and on the other, although the ligatures had cut through, there was no opening of the wound: there existed no symptoms of excessive inflammation of the parts, or of irritation of the system. In fifteen days

the cicatrices were perfectly formed, and the wound on the throat almost closed. On closing the mouth, the artificial lip seemed very well adapted to the other, and even when partially opened retained the saliva, and very materially diminished the unseemliness of features. It cannot be yet determined whether or not the second set of teeth, with their alveoli, have been so much destroyed as to prevent the great help derivable from their growth, by supporting the flaccid flap. On the whole, the result of the operation was very satisfactory, especially at Constantinople, by exalting the practice and utility of surgery amongst the Turks, and encouraging them to submit to operations beyond the barber's province of bleeding and tooth-drawing.—*Glasgow Medical Journal.*

25. *Pathology of Jaundice.*—The appearance of the skin and the nature of the discharges in jaundice, have given rise to the idea that an obstruction takes place in the ducts, by which the bile is prevented from passing into the duodenum. Cases of the disease are so seldom fatal, as to afford but limited opportunities of settling this point by actual examination. Seven cases, however, terminated fatally in the wards of La Charite in Paris, in 1828, 1829, and 1830, in which jaundice existed in a severe form. On examination, six of the seven were found to present no obstruction whatever of the biliary ducts. In the seventh they were impervious, being involved with the gall-bladder, part of the liver, and part of the pancreas, in a cancerous mass of the size of the fist. In several of the cases, the liver is said to have appeared of a pale yellow color, and in one only to have contained an unusual quantity of bile.—*Bost. Med. and Surg. Journ.*

26. *Living Skeleton.*—Whilst that miserable being, by the name of Edson, who was known here under the above title about a year since, was exhibiting himself in Paris, it appears that with the view of extending his reputation, he offered himself as an object of curiosity to the Academy, who appointed M. Larrey to examine him, and report accordingly. The distinguished academician not being able to attend to this duty, his confrere, M. Arogo, undertook it in his stead. His report was read at the meeting of the Academy, the 21st of December last. As his condition in one or two respects seems to have altered since he left here, it may perhaps be interesting to those of our readers who recollect his person, to see an abstract of M. Arago's remarks. After speaking of the general facts regarding his place of birth, early history, &c., the reporter arranges the most remarkable circumstances of his condition in the following manner:

1. There is a reduction of the bulk of the person in all its dimensions, even the height being less than when in a healthy state.

2. The muscles, which can be perfectly well examined through the skin, appear as small, dense cords, being deprived, to a great degree, of their interstitial cellular substance.

3. The heart, which beats very feebly, is smaller than a natural size, and seems to have partaken of the general emaciation.

4. The teeth are rendered naked by the absorption of the gums, and some of the incisors are wanting. He has been affected with chronic ophthalmia, which has terminated in ulceration of the cornea, so that he is now entirely blind.

5. The excretions are regular, but small, and in proportion to the quantity of food taken. The urine is turbid.

6. The hair is thin and nearly white.

7. The senses, with the exception of the loss of sight above mentioned, remain unaffected. The mind is clear, and he gives proof of considerable capacity.

8. The reproductive powers are not impaired. He has four children, all in excellent health.—*Ib.*

27. *Poisonous Secretion from the Body of a Horse.*—A horse in the town of Benton, in this county, was discovered to be ailing by his owner, and considerably bloated. Incisions were made through the skin in different parts of the body, from which proceeded a kind of liquid matter resembling honey. The appearance was not so singular as its poisonous qualities. We learn that those attending him, not apprehending danger, were less cautious about diffusing it upon the hands and arms. Wherever it touched, it produced a more surprising effect. The skin first blistered, and then seemed to yield to the poison by breaking away, and presented the flesh in a cankered state. They were alarmed, and immediately called medical aid, which, we are happy to learn, was so successful as to stop its ravages. The horse still lives.—*Penn. Yan. Gaz.*

28. *The Use of Sulphate of Morphine in Ophthalmia.*—By Charles A. Lee, M. D., *New-York.*—I have lately employed a solution of the sulphate of morphine, in cases of ophthalmia, with very beneficial results. The first case in which I used it was one of acute conjunctival inflammation, attended with great intolerance of light, with constant pain and itching. The relief was immediate, and no other wash was required. Every practitioner who has had much experience in this class of diseases, knows the efficacy of the lotions in general use. For the most part, by causing irritation, they do more harm than good. Even the aqueous solutions of opium, the most sedative of any in use, are liable to this objection, as is remarked by Francis, in his Synopsis.

The advantages which morphine possesses over all others, recommended for eye lotions, are too obvious to need pointing out. As a direct sedative, it allays all pain and irritation, and diminishes that distressing intolerance of light, which usually attends ophthalmic cases. My usual formula is the following:—R. Sulph Morphine, gr. ij.; Aquæ dist. dr. i. M.

Some cases require a solution of greater strength, according to the severity of the symptoms. It should be applied tepid, and occasionally a cloth, dipped in the solution, may be kept applied to the eye. I cannot state, from my own experience, whether it will prove as

useful in chronic as acute cases, though, doubtless, it may be used advantageously to answer the same indications. From the atony of the vessels in these cases, stimulating lotions of the metallic salts will be indispensable.—*New York Med. Journal.*

29. *Veratria and Colchicum Autumnale.*—The next alkali with which Dr. Bardsley has furnished us the result of his experience, is the veratria, and the preparation used by him was the acetate. The reader will recollect that the substance known by the name of veratria, was first obtained from the veratrum *sabadilla* by those French chemists whose names were mentioned as having discovered the strychnia and brucia in nux vomica. The same indefatigable analysts afterwards discovered the substance under consideration, in the veratrum *album* and in colchicum autumnale; and the evidence of its activity was exhibited in its rapidly fatal effects on dogs and other quadrupeds. As a medical agent, Dr. B. first tried the acetate of veratria in the following case of *dropsy*.

Hugh Cairns, 39 years of age, was admitted into the hospital on the 7th of November, 1826, on account of ascites and anasarcous swellings of the lower extremities. He had been ill three months.—His urine was scanty, thirst urgent, pulse feeble, and respiration somewhat difficult. He commenced with a quarter of a grain of veratria every four hours. This quantity did not act upon the bowels with energy. It was then increased to have a grain in the same intervals. In this proportion it occasioned several copious watery dejections daily. On the 30th, the swellings were considerably diminished. He was now directed to take a grain of veratria twice daily. On the 9th of January he was discharged, cured.

The hopes encouraged by the termination of this case, were subsequently disappointed by the total failure of the remedy to do good in any other of the 6 cases of dropsy in which it was administered, and in two of which relief was afterwards obtained from the calomel and squill. It appears, therefore, so far, to be of little value in medicine, and in no respect advantageous over elaterium, with which it appears to correspond very accurately in its effects on the human system.

The most valuable part of Dr. B.'s experiments on this head, are his trial of veratria, and of colchicum, each in 24 cases of *chronic rheumatism*. The fame of the meadow saffron in the cure of gout, rheumatism, and some pectoral complaints is so high and extended, that the degree in which its efficacy may be attributed to this active principle which has been discovered in it, is matter of interest to every practitioner. The cases of rheumatism, to which Dr. B.'s observations with the veratria appear to have been confined, were very similar to those in which he administered the colchicum;—so much so as to be regarded by him parallel.

It is well known that hellebore and meadow saffron have each been suffered to be the basis of the famous eau-medicinale, which was long esteemed a specific for gout, and which exerted a power equally curative over its near relative, the rheumatism. The prescription from

which this French nostrum was compounded, became extinct with its author—a fact which is never referred to by the bon vivant but with a solemn countenance, and which may perhaps be regarded by all as matter of regret. It will appear by the following table, that it will be hard to decide, from their effects on the system, which of the two simples above mentioned most probably gave its efficacy to the remedy of M. Haller. The form of colchicum used by Dr. B. was the vinous tincture prepared from the seeds.

24 CASES OF CHRONIC RHEUMATISM TREATED

1st, with Veratria, ***2d, with Colchicum.***

Species.	Treatment.	Result.	Species.	Treatment.	Result.
Sciatica	Veratr. gr. 1-4 ad gr. ss. ter in die	Relieved	Sciatica	Vin. Colch. gutt. xxv ter in die	Relieved
Chronic Rheumatism	Ditto	Relieved	Chronic Rheumatism	Ditto	Cured
Sciatica	Ditto	Cured	Ditto	Ditto	Relieved
Lumbago	Ditto	Cured	Lumbago	Vin. Colch. gutt. xv ter in die	Cured
Ditto	Ditto	Cured	Ditto	Vin. Colch. gutt xxv and xxx ter in die	Cured
Chronic Rheumatism	Ditto	Relieved	Chronic Rheumatism	Vin. Colch. gutt. xxv ter in die	Cured
Ditto	Ditto	Cured	Ditto	Ditto	Relieved
Ditto	Veratr. gr. 1-4 ad gr. i., bis in die.	Relieved	Ditto	Ditto	Cured
Ditto	Veratr. gr. 1-4 ad gr. ss. quat. in die	No benefit	Ditto	Ditto	Relieved
Ditto	Ditto	Relieved	Ditto	Vin. Colch. gutt. xv ter in die	No benefit
Ditto	Ditto	No benefit	Ditto	Ditto	Ditto
Ditto	Veratr. gr. 1-4 ad gr. ss. ter in die	Ditto	Ditto	Ditto	Ditto
Ditto	Ditto	Ditto	Ditto	Vin. Colch. gutt. xx ter in die	Relieved
Ditto	Veratr. gr. 1-4 ad gr. ss. quat. in die	Ditto	Ditto	Vin. Colch. gutt. xxv ter in die	Relieved
Ditto	Ditto	Relieved	Ditto	Ditto	Ditto
Sciatica	Ditto	Cured	Ditto	Ditto	Cured
Chronic Rheumatism	Veratr. gr. 1-4 ad gr ss. ter in die	Relieved	Ditto	Ditto	Relieved
Ditto	Ditto	Ditto	Ditto	Ditto	Ditto
Ditto	Veratr. gr. 1-8 ad gr. ss. bis in die	No benefit	Sciatica	Ditto	Ditto
Ditto	Veratr. gr. 1-4 ad gr. ss. ter in die	Relieved	Ditto	Ditto	No benefit
Ditto	Veratr. gr. 1-4 ad gr. ss. quat. in die	Cured	Chronic Rheumatism	Ditto	Ditto
Ditto	Ditto	Relieved	Ditto	Ditto	Ditto
Ditto	Veratr. gr. 1-4 ad gr. ss. ter in die	Cured	Ditto	Vin. Colch. gutt. xxv ad xxx ter in die	Relieved
Ditto	Ditto	No benefit	Ditto	Ditto	Cured

By comparing these tables, it will be seen that the Veratria cured 7—relieved 10—and failed in 7;—the Colchicum cured 7—relieved 11—and failed in 6. The coincidence is very remarkable, and leaves, in favor of the former, the advantage only of the convenience of administration from the small bulk in which it is given;—but the result of these cases appears to show that the efficacy of the meadow saffron is chiefly by virtue of the veratria contained in it.

The action of the two substances on the system was also analogous, both producing copious watery evacuations; and it is probable the claims of the saffron to a specific for gout, rest, in fact, on its power of producing such evacuations.

In the administration of both these medicines, Dr. B. noticed the pulse in a short time to become slower and depressed, and if the dose

was rapidly augmented, distressing nausea and vomiting as well as purging. Yet he discourages its use in acute rheumatism, and considers the practice of Mr. Haden, who reports so favorably of it in this disease, as an exceedingly dangerous precedent. It will not perhaps be out of place here, to allude to the great and decided power of prussic acid in arresting vomiting, which is thus often the effect of large or continued doses of the colchicum. One or two minims of the acid, repeated two or three times a day, will seldom fail to arrest vomiting, however long it may have resisted other remedies. This fact must now be considered so well established as to require no further confirmation.

The dose of veratria is one-fourth of a grain, gradually increased to a half or whole grain twice or thrice daily. Of the wine of the seeds of the colchicum, the commencing dose in fifteen minims, and it may be slowly increased to thirty;—beyond these maxima, the stomach will rarely tolerate these powerful agents.

30. *The late Mr. Abernethy.*—The following brief account of this eminent surgeon, accompanies the notice of his death in the last No. of the London Medical Gazette

Mr. Abernethy died at his seat at Enfield, on Wednesday, the 20th, between the hours of four and five in the afternoon. The event, we must confess, took us rather by surprise; though from the circumstance of his having retired some time since from business and the bustle of the town, on the plea of bodily infirmity and declining health, we should not have been quite so ill prepared for the intelligence.

Thus has one of the brightest stars of British surgery vanished from our horizon: we have lost the lineal successor—the immediate link that connected us with the times of Pott and John Hunter—the Haller of England—one of the ablest physiologists of our day.

We may be pardoned for applying to him the pathetic lines which were originally appropriated to one of his predecessors:

> "Cold is that hand which nature's paths display'd;
> Dead are those lips on which instruction hung,
> Fix'd are those eyes, enlivening all he said,
> Forever mute is that persuasive tongue!"

It was the boast of Mr. Pott, the year before he died, that he had served, man and boy, in St. Bartholomew's Hospital for half a century. Mr. Abernethy could lay claim to the same distinction: he was literally worn out in the service. He had not attained to the "days of the years of man's life," neither had he reached the ordinary average, which, it is remarkable, is generally allotted to eminent men in our profession—to anatomists more especially: he was only in his sixty-seventh year when he sunk under the disease—an asthmatic affection (complicated, we suspect, with disease of the heart*), which for several years, but particularly for the last two, has been bringing him down gradually to the grave. Nothing, we believe, worthy of any special

* The body, we understand, has not been opened.

notice occurred during the latter stages of his complaint.- it was attended with general dropsy, and proceeded steadily to the extinction of the vital powers. One circumstance, however, connected with the severe attack which he suffered two years ago—that paroxysm which broke him up, and forced him to part forever from his beloved chair—may be here related.

We have many illustrations on record of original and powerful minds displaying the influence of their ruling passion when almost in the mortal struggle. Haller is said to have felt his own pulse, and marked some phenomena, attending the last beats of fluttering existence; and John Hunter, amid the anguish of angina pectoris, scrutinized his symptoms with the eye of a pathologist. With Abernethy the lecture-room is well known to have been the scene of his chief delight; and in an attack which threatened him with suffocation, after some hours of struggling for his life, it is said the first words he uttered were, "egad, I think I shall still be able to lecture this afternoon!"

Full half a century has elapsed* since the walls of St. Bartholomew's first received John Abernethy as a student. The progress which he made in his studies was exemplary: he had scarcely attained his twenty-second year when he became assistant-surgeon to the hospital, and succeeded Mr. Pott as lecturer in anatomy and surgery.

Nor was this any trivial period for earning a character; it was no vulgar time for becoming distinguished. William Hunter had just gone off the scene, after having gained immortal reputation both as a teacher and practitioner; and John was still in the full vigor of his powers and his fame. Yet was not the young Abernethy undistinguished: already had he given birth to anticipations the most sanguine. He could not have been above thirty, when we find Mr. Earle (afterwards Sir James) speaking of him as one "who, whether he was considered as a practioner of surgery, or a philosopher, deserved to be mentioned in the most encomiastic terms;" and the very year after (1797) we find him, along with Sir James himself, honored with a niche in the temple of fame:

"——Call Earle useful, Abernethy deep"—

says the author of the Pursuits of Literature—the learned unknown—who thus, too, qualifies him in a note:—"John Abernethy, Esq., F. R. S., a young surgeon, of an accurate and philosophical spirit of investigation, from whose genius and labors I am led to think the medical art and natural philosophy may hereafter receive very great accessions."

Thus early did he give promise of that fulness and maturity of merit, which he afterwards so conspicuously displayed.

He began to teach his profession, it may be observed, at a time when others are usually employed in learning it. But this was not all: he soon after presented the world with some of those essays on

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*Mr. Abernethy, we are informed, was sprung from Irish parents, but born in London in the year 1765. He was grandson of the celebrated presbyterian preacher, the author of the "Sermons on the Attributes."

various subjects connected with his profession, which placed him in the very first rank of physiologists, as a man gifted with superior powers of observation, and with extraordinary clearness and originality of thought.

It was in one of those essays that he first announced his plan of putting a ligature on the external iliac artery; thus showing the practicability of effecting what was hitherto deemed impossible; and thus making good his title to be esteemed as a benefactor and preserver of his species, by saving the lives of numbers who must but for him have inevitably perished. The operation is classed by M. Roux, along with that of John Hunter, for popliteal aneurism, and both set down as a brilliant epoch in the history of the progress of surgery. It procured Mr. Abernethy, in fact, a European reputation. Yet it may with much propriety be doubted whether the circumstances attendant upon this case entitle the subject of our present article to the honors of a philosophical inventer. The great operations of tying the external iliac, and of securing the carotid artery—which latter also he was the first, at least in this country, to perform—were the offspring of emergencies. They were, however, the applications to practice of preconceived theoretical knowledge; and it was this turn in Mr. Abernethy's mind which made him so constantly refer to Hunter. The peculiar character, in fact, of his professional pursuits, was the application of physiology to the improvement of practical surgery.

In process of time, he succeeded Sir James Earle as physician to St. Bartholomew's; and it is universally known to how high a pitch of public estimation that establishment arrived, both as a hospital and a medical school, while his name was connected with it. We cannot enter into any very minute particulars in this rapid sketch, but we may allude to one circumstance, relating to St. Bartholomew's Hospital, at the period in question—the surprising paucity of operations in that establishment during Mr. Abernethy's time. We say, emphatically, during Mr. Abernethy's time; for to him has the circumstance been by common consent attributed. Of the fact itself there can be no doubt; it has been frequently announced in the most public manner, by one of the highest authorities at present connected with the hospital, that there are not nearly so many operations now performed in St. Bartholomew's as there were five-and-twenty years ago.

In this respect Mr. Abernethy will strongly remind us of Haller and John Hunter—the gods of his own idolatry; and, perhaps, were we appointed to assign him a suitable rank among the eminent of his profession, we should place him in somewhat of an intermediate position between those two greatest physiologists that the world has ever seen. Haller, indeed, was a physician, but he was probably the most surgical of physicians; while Abernethy was, perhaps, the most medical of surgeons. And John Hunter, we should say, was more of the pure surgeon than either. All were sensitively cautious, averse to the performance of operations, except in the very last resort; and in all, it may be attributed, perhaps, to their possessing, in an eminent degree, those "compunctious visitings of nature" which are so beautifully becoming to the great and benevolent mind.

Haller had almost a monastic abhorrence of blood. John Hunter held that a surgeon "should never approach his victim but with humiliation:" an operation, he considered, as a "reflection upon the healing art; the habitual operator, as a savage in arms, who performs by violence what a civilized person would accomplish by stratagem." Mr. Abernethy is known to have entertained much the same sentiments: he specially praises John Hunter for being averse to operations, and imputes it to him as one of the excellencies of his nature. Nor was his own averseness a factitious feature in his character. We remember on one occasion, not many years ago, when Mr. Abernethy had to operate on a patient for stone, the requisite incisions were made by him with all due skill and adroitness; but the business was far from being completed when his stock of *sang froid* manifestly failed him: he tried in vain to grasp the stone; he could not find it; he became embarrassed; he hesitated; and at last anxiously transferred the forceps into the hands of his assistant, plainly showing, at least, how little of the studied apathy of the stoic there was about him. He never operated for the stone again.

And here we cannot help reflecting how much for the worse opinions seem to have changed of late—indeed very lately—with regard to the duties of a practical surgeon. Operations are beginning once more to be looked to as the test of pre-eminent ability: and a surgeon, if he go not through his work with something like what Gibbon calls "the savage coolness of an anatomist"—with more regard to scientific and dexterous performance, even than to the life of his patient—is but too frequently supposed to be possessed of only an inferior degree of merit. But we have just cited three of the greatest authorities of latter times: and it should never be overlooked that the proudest boast of modern surgery is, that of diminishing the number of its operations.

Mr. Abernethy derived much celebrity from his lectures: he was certainly, in his day, the most famous teacher in London. And it could scarcely be otherwise. He began early, and in a good school; he was a fluent and energetic speaker, and having a clear and accurate conception of what he taught, he knew well how to place in a distinct and intelligible point of view even the most abstruse subjects of discussion. The spirit which he threw into his delivery, together with his felicitous and striking powers of illustration, gave also a peculiar charm to his manner.

But in what terms should we notice that native and rich humor which not only carried him to the bosoms of his pupils, but rendered him so marked a favorite with the public? Perhaps since the days of Dr. Radcliffe there has not been a medical practitioner so popular, and so much run after, both for his acknowledged skill and on account of his eccentric peculiarities. But how contradictory are the reports which are current on this subject! Many of his patients, no doubt, have come away from him affronted, and with their self-importance seriously disturbed; yet how many have still been found anxious once more to try the fate of their reception! What were these, however,

to the numbers who visited him and took their leave impressed ever after with the strongest sense of his humanity, his superior talent, and his perfect good humor? Liberality, in fact, and kindness, were among the most prominent features of his character; and his humor, though sometimes remarkable for its causticity, was never disfigured by that coarseness which belongs to the innumerable anecdotes falsely attributed to him, and many of which are more remarkable for their brutality than their wit. We could readily swell our little narrative into a book full of his facetiæ and humorous ebullitions, but that the solemnity of the present occasion forbids even an approach to the levity of amusement.

As we have just been speaking of his success with the public as a practitioner, it is but right to add, that those who have never seen Mr. Abernethy till of late years, can scarcely form any adequate idea of him in the brighter period of his life. Had this great man condescended to adopt the arts too often practiced for the purpose of getting money, what wealth might he not have accumulated! And having alluded to the accumulation of wealth, we are naturally led to another reflection on a subject somewhat metaphorically akin to this. Had the industry of Abernethy but equalled his genius, what treasures in science might he not have amassed! We have sometimes heard it laid to his charge, that his lectures in anatomy were rather too superficial—that he trusted, on many occasions, rather to the resources of his memory or his imagination, than to impressions derived from recent study and research—and that, as an author, Mr. Abernethy certainly might have done more. Both these imputations, however, are perhaps more visionary than real. If there were any semblance of truth about the first, the very imperfection imputed will be found to be not without a reasonable defence. The omissions in the matter of anatomical minutiæ were in many instances made advisedly; the lecturer probably thinking that such information was most properly to be acquired in the practical business of the dissecting-room, while the time thus saved would be most profitably employed in building up a sound surgical superstructure. And in laying down principles, what teacher ever surpassed the subject of our memoir? Then as to the deficiencies of his authorship, it is true that what he has published is not voluminous, but it is the concentrated essence of what might have been voluminous—the pith of the profound and extensive meditation of his earlier life. For our parts, we suspect had Mr. Abernethy had more time, and we are willing to add, more industry—consistently with his expressed principles—he might, in subsequent editions, have materially reduced the volume of his works. The motto, it may be mentioned, which he has adopted for one of his latest publications, is strongly indicative of his feeling on the subject:—"The increase of knowledge," says he, "is not like that of other things, for it is often accompanied by a considerable diminution of its bulk."

One anecdote, and we have done. Mr. Abernethy's memory was wonderful: no one knew when or how he formed his acquaintance with Shakspeare, yet he had the writings of the immortal bard almost

by heart, and used very frequently to quote them. He was fond of the theatre, too, and would himself sometimes try his skill in the histrionic art: on one of these occasions, when in company with Mrs. Abington, he burst forth in the language of Richard, and the celebrated actress whom we have just mentioned declared that she had never heard any one whose manner and delivery so much reminded her of Garrick.

Much of the intellect and humor which belonged to him were displayed in his countenance. The best likeness of him is that painted by Lawrence, from which an excellent engraving has been made;—it represents him in his favorite occupation of lecturing. Another, by Turner, which shows him at a later period, is possessed of merit; it has been copied in mezzotinto. There is also a small print which exhibits him standing with his hands in his pockets:—the general expression in this design is very happy, though the individual portions of the picture are less felicitous.

To the Editor of the Boston Medical and Surgical Journal.

31. *Case in which brass wire was extracted from under the skin of a female, in whom it had induced Tetanic Symptoms.*—DEAR SIR:—As the following case, from the singularity of the circumstances that attended it, may be deemed worthy an insertion in your Journal, I take the liberty of sending it you for that purpose.—Yours, &c.

JOHN B. BROWN.

Mrs. A., a young married woman, about 25 years old, of feeble constitution, and lax, moveable fibre, sent for me in the night of the 31st of January, 1831.

I found her sitting in bed, very much bent forward, and unable to alter her position, so much even as to look up. The account she gave me, was, that she had been subject to cramp in her lower extremities; and that then she had it all over her, in consequence, as she supposed, of a sudden cold, taken by walking on snow and ice with thin shoes. There was nothing impossible or very improbable in this statement; and as I was not made acquainted with any other more rational way of accounting for Mrs. A.'s present symptoms, I looked upon it as an unusual and singular case. I prescribed an emetic of tart. antimonii, which I supposed would relax the spasms, as it happily did, as soon as the medicine began to nauseate the stomach; and in the course of half an hour, she was able to extend herself and lay in a horizontal position as usual.

Feb. 1st, 9 o'clock, A. M.—Found Mrs. A. very comfortable. She had had a good night and slept well. Her pulse was a little accelerated: but her skin was moist, and there had been no recurrence of cramp. Gave a cathartic.

Feb. 2d.—Found Mrs. A. as well as yesterday. The medicine had operated favorably. As I was about taking my leave, she rather incidentally drew my attention to a circumstance, which she did not herself appear to consider of much importance, but which led me to

suspect that the spasmodic symptoms she exhibited, at my first visit, were of a tetanic character. She proceeded to state, that she had something in her side, which she could distinctly feel, and which was moveable. She supposed it to be a piece of bone, splintered from one of the ribs, by a fall that she had on the ice, about two years previous—that she felt it soon after this accident, and that it had at times given her uneasiness, by its pricking her, when she turned her body suddenly in a particular direction. It was difficult, at first, for me to feel the substance she mentioned, but at length I got it between my thumb and finger. It appeared about the length and size of a common darning-needle. I advised her to have it taken out, and she readily consented to it, but as it was not convenient to have it done that day, the next day was agreed upon for the purpose. In the night, however, of the same day, I was called to her again, and found her suffering under decided symptoms of tetanus. She was thrown convulsively back, and her jaws were locked. I had now no doubt, at all, that the foreign substance she had mentioned, and which I had distinctly felt in the morning, was the exciting cause of her present symptoms. I therefore concluded not to defer the operation until the next morning, as we had previously agreed to do, but to remove the substance, whatever it might be, immediately, although obviously much more inconvenient doing it in the night, than in the day.

Accordingly I cut down and took out a piece about an inch and a half long, but sensible that I had not got the whole; and upon farther examination, I discovered and took out another piece, about an eighth of an inch long. These substances proved to be pieces of small *brass wire.*

The spasms continued through the night. They came on very regularly about once an hour, and continued for fifteen or twenty minutes, when they went off entirely, and she could speak, and move herself in every direction, as usual.

During the paroxysms of clonic spasms, the two varieties of Tetanus, denominated Opisthotonos and Trismus, were exhibited in as perfect a manner as I have ever witnesed them in any case that has come under my observation.

Feb. 3d.—I asked Dr. Warren to visit Mrs. A. in consultation.—The paroxysms still continued in full force, and as she was confident, from the pricking sensation she felt, that a portion of the wire still remained in her side, Dr. W. made a large incision for the purpose of ascertaining the fact, and of removing any fragment that might remain. The attempt proved ineffectual, as no vestige of the wire could be found. During the operation, a bubble of air was seen to come up from the lungs. This circumstance is mentioned here, as it may be of some importance should we attempt to solve the problem that naturally presents itself, viz., how came this wire here? Brass wire is an article not in common use among females—needles *are*; and the appearance of a needle in almost any part of the body would not be a circumstance, of very uncommon occurrence, it being well known that needles sometimes penetrate the skin without producing sufficient sensation to attract notice; and pass to extreme parts of the

body with little or no inconvenience to the subject of their perambulations.

Feb. 4th.—Paroxysms still continued at irregular intervals. She was easily affected by opium. One grain would keep off the spasms for several hours. Musk also had a favorable effect, and was used as an auxiliary to the opium.

5th.—Paroxysms continued as on the 4th, at irregular intervals.

6th.—Mrs. A. had had no return of spasms since 3 o'clock, P. M., of the preceding day, about which time she felt something fall, as she thinks, from the external wound (made by cutting for the wire) down into the stomach. Prescribed ol. ricini.

7th.—There had been no recurrence of the spasms since the 5th, at 3 o'clock, P. M. The oil given the preceding day had operated very well, but owing to negligence, the dejections were not examined with sufficient care to determine satisfactorily, whether, or not, any unusual substance had passed.

8th.—She raised blood this morning.

9th.—She raised blood again.

17th.—Mrs. A. went on very well from last date. She told me, however, that the preceding night she had been kept awake by a pain in her right arm. Formerly, when quite young, she run a needle into her right thumb, which was broken off. The part was cut out at the time, but ever since, Mrs. A. told me that she had at times experienced pain extending from the right thumb to the right shoulder, very similar to what she suffered the night before.

19th.—Complained of a pricking sensation in the bowels, which she attributed to the wire passing down through the intestines; for she was fully confident that the sensation she felt on the 5th inst. was occasioned by a portion of the wire falling from the external wound down into her stomach.

21st.—Mrs. A. had had a slight spasm the preceding night. The right arm and shoulder were drawn back for a short time, but the paroxysm soon went off, and she was as well on this day as usual.

June 22d, 1831.—It is now nearly six months since Mrs. A.'s attack, and she has had but one slight symptom of tetanus since the 5th of February last. She has recently returned from a journey to the south, and from what I can learn, her health is better than it has been for several years.

I ought to mention that six weeks previous to my being called to her, as she was turning in bed, she felt something break in her side. She supposed it was the *bone*, for at that time she thought the moveable substance in her side, a splinter of bone from the ribs, as mentioned above. She was very faint for some time after this took place, and had not recovered her usual degree of health on the 31st of January last, the day on which she was attacked with this formidable complaint.

As a subject of curiosity, it would be some satisfaction to know how brass wire came to be in this woman's side without her knowledge.

"The thing is neither strange nor rare,
But how the d—l came it *there*!"

She distinctly recollects, that about a year before she perceived it, in attempting to swallow a piece of bread, she found great difficulty, and afterwards spit up blood from the throat. Her family also distinctly remember the circumstance, and the baker was dismissed immediately afterwards—not merely in consequence of this circumstance, but because she had frequently found dirt and other foreign substances in his bread before.

Is it not possible that a suspender wire, or a fragment of a tattered wire sieve, should by accident have gotten into the bread, and thus been swallowed? By the contractions of the stomach, or some other unknown cause, might not a portion of the wire have been straightened and propelled through the coats of this organ, the lower part of the lung, and the intercostal muscles, and, by the obstruction of the skin, been turned into a horizontal position, whilst the other extremity of it remained in the stomach? Could not the sensation of something breaking, which she felt some weeks before her recent illness, have been caused by a separation of the part thus protruded, from that in the stomach? and could not the sensation, which she afterwards experienced, on the 5th of February (when the spasms left her), of something falling down into the stomach from the external incision, have been the disengagement of this evil, which, having nothing to support it (the part protruded having been taken out), fell into the stomach, and afterwards caused, in its passage through the intestines, that pricking sensation which she complained of? This is all hypothesis, and I regret that I have not been able to ascertain in a more satisfactory manner the modus operandi of this important piece of wire.—From all the facts and circumstances of the case, however, I am induced to believe that it was, in the first instance, taken into the stomach.

Boston, June 23, 1831.

32. *On a New Practice in Acute and Chronic Rheumatism.* By J. K. Mitchell, M. D., *one of the attending Physicians of the Pennsylvania Hospital.*—In the autumn of 1827, a patient affected with caries of the spine, was suddenly attacked with all the usual symptoms of acute rheumatism of the lower extremities. One ankle, and the knee of the opposite leg tumefied, red, hot, and painful, afforded as fair a specimen of that disease in its acute stage as is usually met with.—The usual treatment by leeches, purgatives, and cooling diaphoretics, with evaporating lotions, had the effect of transferring the symptoms to the other ankle and knee, and finally to the hip. Disappointed in the treatment, I began to suspect that the cause of the irritation might lie in the affected spine. The difficulty of cure, the transfer of irritation from one part of the lower extremities to another, without any sensible diminution of disease, and the fact of the existence of caries in the lumbar vertebræ, which lie near the origin of the nerves of the lower extremities, rendered probable the opinion, that in the spinal marrow lay the cause of this apparently indomitable and migratory inflammation. Under this impression, I caused leeches to be applied to the lumbar curve, and followed them by a blister, placed on the

same spot. Relief promptly followed these remedies, and the pain ceasing to be felt in the limbs, was perceived only in the immediate vicinity of the spinal curve. After the blistered surface recovered its cuticle, a few leeches placed over the diseased spine removed the pain, and left the patient in the usual state of indifferent health attendant on such forms of spinal disease.

Striking as were the benefits of the applications made to the spine in a case of apparent inflammatory rheumatism, they did not lead my mind at the time, to the general conclusions which, viewing the case as I now do, they ought to have suggested.

In the beginning of the ensuing winter, another case of a similar kind peesented itself. A little female patient, having curvature of the cervical vertebræ, was attacked in the night with severe pain in the wrist, attended with redness, tumefaction, and heat. As on the appearance of these symptoms, the pain in the neck, to which she was accustomed, subsided, I easily persuaded myself of the spinal origin of this inflammation, and accordingly applied leeches to the cervical spine, with the effect of procuring a prompt solution of the disease of the wrist.

This case led me very naturally to the reflection that, perhaps other cases of rheumatism might have an origination in the *medulla spinalis*, and depend on an irritation of that important organ. In the following spring an opportunity of testing by practice the truth of this opinion presented itself. William Curran, a respectable livery stable keeper in Marshall's Court, had been for upwards of two years afflicted with a rheumatism of the lower extremities, which gradually deprived him of the use of his limbs, and finally confined him to his chamber. Regular medical aid, and many empirical remedies had been procured, without an abatement of the pain, which became at length almost intolerable.

On my first visit I found him in his room, in a paroxysm of pain.—His legs were swollen from knee to ankle, and the enlargement of the periosteum and integuments, gave to the anterior face of the tibia an unnatural prominence. In that place the pain and tenderness on pressure, were particularly developed. He was also suffering severely from pain in the scalp, which had existed for a short time previously, and was at length almost insupportable. Along with these symptoms appeared the usual febrile action with its concomitants.

Notwithstanding the significant hints given by the spine-cases referred to, I treated this case for a time in the usual manner—depleted freely, purged actively, blistered the head, and having caused an abatement of fever, administered corrosive sublimate and decoction of sarsaparilla. Defeated in all my efforts, I at length suggested to my patient the possibility that his disease was so unmanageable because we had not applied our remedies to the true seat of disease, and that by addressing our measures to the spine, success might yet be found.—Accordingly on the 16th of February, 1828, nine days after my first visit, I had him *cupped at the back of the neck*, and as he could not bear any more direct depletion, inserted a large seton over the *lumbar spinal region*. The cupping, followed by blisters to the back of the neck,

relieved his head, and as soon as the seton began to suppurate freely, his legs became more comfortable. From the 25th, nine days after the insertion of the seton, I visited him but seldom, although I had seen him once or twice a day until that period. Indeed, I paid him but seven visits after the 25th. The last was on the 30th of March.—Soon afterwards he resumed his usual pursuits, and about the beginning of June the seton was removed. Since that time he has not had a return of his complaint, and is at the date of this paper, in the full and virgorous exercise of all his physical faculties.

I could scarcely doubt as to the cause of the cure in this case, because the treatment applied to the spine was that alone which had not already been fully and fairly tried, either by me or those who had preceded me. Indeed, the last applications were made with some hope of success, and the grounds of that hope were expressed to the patient, who was fully persuaded that the spinal treatment was the chief, if not the sole agent of restoration.

No other well-marked case of rheumatism presented itself in my private circle of practice, until in the winter of 1830, Mr. Teale's work on neuralgic diseases reached this country and began to attract towards the spinal marrow a greater share of medical attention. Although in his essay, I found nothing *directly* calculated to sustain me in the opinion I felt disposed to adopt concerning the spinal origin of rheumatism, I rose from its perusal with increased confidence in that opinion, and resolved experimentally to examine its truth. The first *well-marked* case of simple inflammatory rheumatism which subsequently presented itself, was the following:

Robert Gordon, well known as the carrier of Poulson's Daily Advertiser, fifty-six years of age, of vigorous constitution and active habits, was the subject of the attack. Observing a severe pain in his right heel and ankle, immediately followed by redness, heat and tumefaction, he caused himself to be largely bled, and took some salts and magnesia. On the following day the pain and swelling increased, and the ankle and knee of the opposite limb becoming similarly affected, he was confined to bed.

On the 3d day my first visit was made. The patient had then a full, strong, frequent pulse, flushed face, dry skin, whitened tongue, and complained much of the severity of the pain in his legs, and of his incapacity of enduring the slightest pressure or motion. As he had already been purged and had used a lotion, I directed the application of seventeen cups to the lumbar region, so as to abstract twelve or sixteen ounces of blood.

Next morning found the pain almost entirely gone, does not complain of moderate pressure, and is able to move his legs without inconvenience. Ordered a draught of salts and magnesia, with an evaporating lotion of camphor in alcohol.

3d day. Pain in legs scarcely perceptible, but the shoulders, elbows, and wrists, are beginning to exhibit marks of severe inflammation, expressed by pain, tumefaction, heat, and redness. Ordered twelve cups to the cervical spine.

4th day. The patient sits up, complains of stiffness, but no pain

except in one wrist, and that very slight. Directed Epsom salt and magnesia.

5th day. Finding nothing for which to prescribe, arranged the patient's diet, recommended the occasional use of aperients, and took leave of the case.

Called on the 10th to inquire into results, and found that there had been no return of disease.

Since that time a very severe winter has passed, during which the subject of this report has continued in his customary health, and in the pursuit of his usual employments.

The reader will, in the above case perceive, that the general bleeding, though very copious, proved of no service, and that the large local depletion of the lumbar region, benefitted solely that part of the disease which lay at the peripheral extremities of the nerves, supplied by the lower end of the spinal marrow. The inflammation in the upper extremities continued afterwards in progress, and was arrested only when cups were placed over the cervical end of the spinal column.

The whole case exhibits a fine exemplification of the difference in the character and extent of the influence of general and topical depletion, and proves that *local blood-letting is most potent when applied to that part of the spine, which supplies with nerves the parts in a state of active inflammation.*

As I feel, in common with the profession, a greater confidence in Hospital reports, especially when made by those who are not by interest or reputation blinded or misled, I shall present the history of some cases treated after the new method, as drawn up at my request, by Dr. STEWARDSON and Dr. NORRIS, the resident physicians of the Pennsylvania Hospital.

(Here follow eight cases of Rheumatism treated in a similar manner, with speedy relief in most of them, and benefit in all.)

Although other cases might be cited in confirmation of the views here taken, I have not leisure at this time to digest and arrange them. At no very distant period I hope to be able to bring the subject more fully before the profession. I may observe in general, that, as far as I now recollect, only two cases of apparent rheumatism, have in my hands, either in private practice, or in the Pennsylvania Hospital, resisted the treatment recommended in this paper, and both of *them* were in reality *neuralgia*, and exhibited no traces of inflammation.—One of them was an affection severely painful, located in the bottom of the heel, the other was gastric and intercostal.

The preference given to local depletion over other local measures, arose from the greater apparent success and promptness of its action, which scarcely left any thing to be desired: but cases will occur in which other measures must be used, and in which, perhaps, all measures will fail. We are warranted, however, in declaring our conviction, that few failures will happen in thus treating *acute* rheumatism, and that success will diminish, as passing through *chronic* rheumatism, we enter on the ground of *neuralgia*, a disease which sometimes spontaneously disappears; but is scarcely ever, in this city, cured by merely *medical* means. The art of the surgeon occasionally subdues

it, and the physician often allays, but seldom removes it. Being paroxysmal, and often slumbering for weeks or months, it is not unfrequently mastered in appearance, though seldom cured in reality.—*Amer. Jour. Med. Sciences, May*, 1831.

33. *Colchicum in Rheumatism.*—The following letter from Mr. Tweedie, of Guy's Hospital, London, to the Medical Gazette of that city, gives the result of some trials of powdered colchicum root, in doses of 4 grs. every 4 hours—6 grs. every 6 hours, &c. &c., each dose combined with 20 or 30 grs. of Epsom salts, and a little magnesia. As the practice has been long common in this country, it is pleasant to find its success confirmed by an English physician of so much note as Dr. Addison.

Though colchicum, says Mr. Tweedie, has long maintained a very respectable rank in the list of our remedial agents for the cure of rheumatism, yet from time to time there have been some who have doubted its efficacy; and even when used with the happiest effects, the result has not been so speedy as to satisfy the sanguine expectations of many of its supporters. Much of this discrepency of opinion is doubtless ascribable to the notorious fact, that the fluid preparations of the drug are compounded in many different ways by various practitioners—a circumstance of itself sufficient to produce great uncertainty of effect, and in many cases complete disappointment.

Another great cause of failure and uncertainty may perhaps consist in this, that the remedial principle of the drug is probably not entirely taken up by the menstrua in either of our pharmacopœial preparations; so that when the vinum, or the acetum colchici, disappoints our expectations, we are scarcely justified in condemning the drug as useless, whose specific principle has, under such circumstances, never been administered at all, or very partially. To obviate these objections, it becomes necessary to administer the remedy *in substance;* and it is to show the benefit of this plan of exhibition that I have ventured to trouble you with these remarks.

The form of application most commonly, I believe, adopted, and which has for some time past been practiced by Dr. Bright in this hospital, is the vinum colchici, combined with so much magnesia and Epsom salt as might suffice to procure several stools daily. Now, this, though hitherto the most successful practice, was yet found to fail so frequently—to seem, in fact, so often inert, that Dr. Addison, our then clinical physician, was happy to avail himself of the evidence of Dr. Jackson, of Boston, in the United States, who was attending our clinical wards as a pupil, and who stated that in the hospital at Boston it was customary to administer the colchicum (for the cure of rheumatism) in substance, to the extent of 3ss. in twenty-four hours, combined with a little magnesia and salts, with such uniform good effect, that he had never had the opportunity of seeing any other plan of treatment called for or adopted, nor was depletion ever premised. Dr. Addison accordingly determined to give the remedy a fair trial, and the following cases, briefly related, will show with what effect.

[Four cases are here related, in all which it was successful, and the letter concludes with the following remarks.]

The sum and substance of what has been already said respecting the treatment of rheumatism, has, I believe, pretty well established the fact that colchicum is its best remedy; and I think the above cases (only a portion of those similarly treated by Dr. Addison in our clinical ward) afford proofs of the powers of the drug, such as are seldom witnessed from the exhibition of any of its artificial preparations. When administered as above described, in doses proportioned to the age and strength of the patient, it for the most part exercises an influence on the system at once marked, decided, and beneficial. After four or five doses have been taken, this influence begins to show itself: the pulse, which was before hard and frequent, diminishes in number very remarkably; it becomes at the same time softer and more expanded, and there is a hesitation in its beat, truly characteristic. The pulse, in fact, resembles much that of oppression of the brain in its slowness and hesitation, but none of its hardness. With this there is a sense of vertigo and dizziness, especially when the patient attempts to sit up. The pupils are sometimes dilated; there is occasionally, but not always, nausea; and the patient complains of uneasy griping sensations in the abdomen, which are chiefly referred to the hypogastric region, and always aggravated during the act of either of the evacuations. The stools are for the most part characteristic; they are of a peculiar loose, yellow nature, such as are seldom, I believe, seen under other circumstances.

In proportion as these symptoms indicate the influence of the colchicum on the system, the rheumatic pain becomes diminished, the swelling and inflammation subside, and in a very brief space of time indeed (as evidenced by the above-related cases,) the disease is at an end. The remedy being now discontinued, all its symptoms gradually decline, leaving the patient quite convalescent, and with a good appetite. But this remedy is by no means infallible.

When administered so as to make the impression on the system above detailed, and when the number of stools procured by its combination with the magnesia and salts does not exceed three or four daily, a rapid improvement takes place; but there are individuals who cannot be placed under this favorable influence. The exceptions to which I allude consist of those cases where the mucous membrane of the bowels is so irritable, that sufficient doses of colchicum cannot be administered without inducing excessive purging; and it has been found in our clinical ward, that when such purging takes place, the system manifests none of the symptoms above mentioned, as indicative of the influence of the medicine. In such cases, it would appear that it expended its whole powers on the bowels, and became removed from the body by the action of purging, before it had time to affect the geeral nervous and vascular systems in the peculiar manner on which seems to depend its favorable operation. These exceptions, however, constitute only a minority; and I know of no rule by which they may *a priori* be known. Dr. Addison gave the colchicum in nearly every case of acute rheumatism indiscriminately; if purging supervened, he found no difficulty in arresting it by means of Dover's powder, &c., and in continuing the treatment accordingly by other remedies.